

CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove eight screws holding cabinet back and remove back. Disconnect HV anode, CRT socket, deflection yoke connectors from main chassis assembly. Disconnect degaussing coil from power supply assembly and speaker connectors from audio chassis and disconnect ground leads. Release wire retainers on degaussing shield, remove screw holding Horiz Stat Control to degaussing shield. Release latches holding main chassis assembly to cabinet bottom and remove chassis and Horiz Stat Control from cabinet. Release AC cord retainer from cabinet bottom. Release latches holding power supply assembly to cabinet bottom and remove assembly from cabinet. Release wire retainers as necessary. CRT may be removed at this point of disassembly. Loosen nine screws holding control

assembly to cabinet front and remove assembly from cabinet. Loosen two screws holding tuner and input/output assembly to cabinet top and remove assembly from cabinet. Release latches holding audio and remote/analog control/CRT display processor, swing assembly towards CRT until flat part of hinge clears flange on hinge mount. Lift hinge off pins and remove assembly from cabinet.

CRT REMOVAL

Follow "Chassis Removal" procedure and remove CRT neck assemblies. Remove ten screws holding front mask assembly to cabinet front and remove assembly from cabinet. Remove four nuts holding CRT to cabinet front and remove CRT from cabinet. Do Not lift CRT by the neck.

SERVICING IN THE FIELD

CRT IMPLSION PROTECTION AND CLEANING

Implsion protection is an integral part of the picture tube, cleaning accomplished without CRT removal.

FUSE DEVICES

A 5-amp fuse is used for AC line protection. (See Placement Chart.)

VHF/UHF TUNER

Two buttons are provided for channel scanning with an Erase Button and an Add Button provided for channel pretuning. Ten buttons are provided on remote transmitter for direct two digit entry channel selection. See channel pretuning procedure.

HORIZONTAL OSCILLATOR

Adjustment of the horizontal hold is accomplished by the proper setting of the Horiz Freq Coll. (See Placement Chart.)

WIDTH

The width may be varied by adjusting the horiz size coll. (See Placement Chart.)

FOCUS

The focus may be varied by a focus control. (See photo, Cabinet-Rear View.)

AGC

The AGC may be varied by RF AGC U and RF AGC V controls. (See Placement Chart.)

CENTERING

Horizontal centering is accomplished by proper placement of the horizontal centering jumpers. (See Placement Chart.)

Vertical centering is accomplished by proper placement of the vertical centering jumpers. (See Placement Chart.)

FOLDER 1
SET 2107

SONY MODEL
KV-2648R (CH.SCC-338E-A)



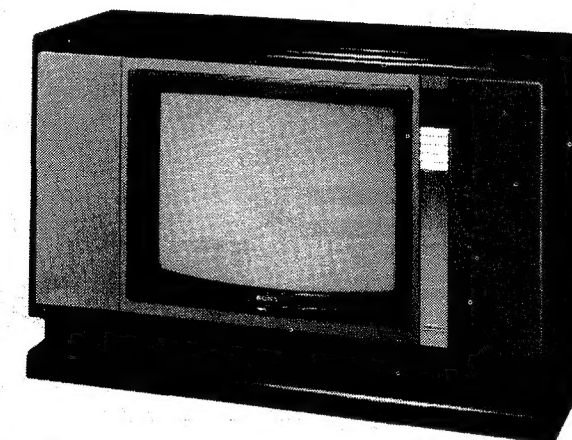
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KV-2648R (CH.SCC-338E-A)

COLOR TV



Model KV-2648R

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The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. 82PD01445

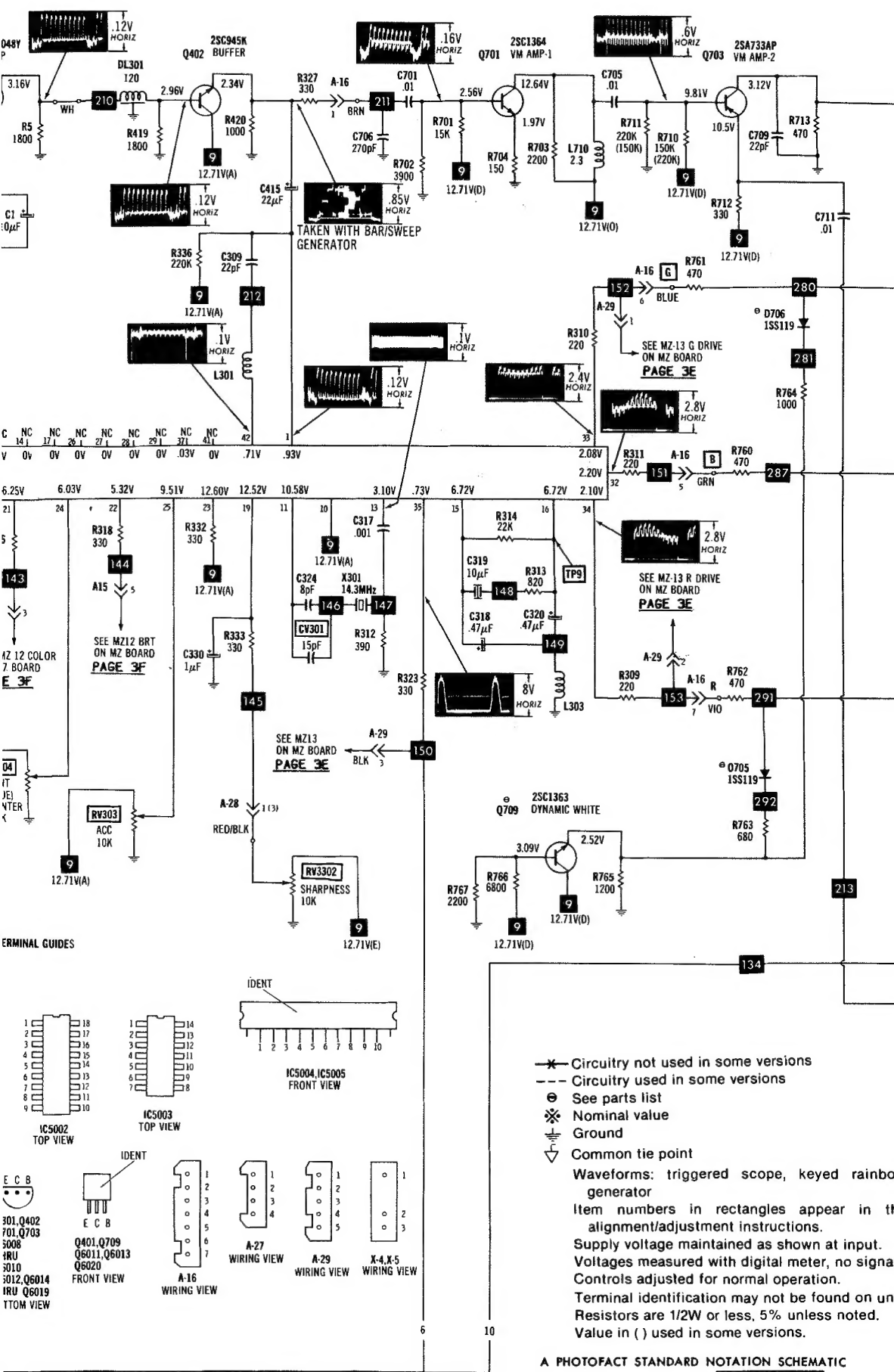
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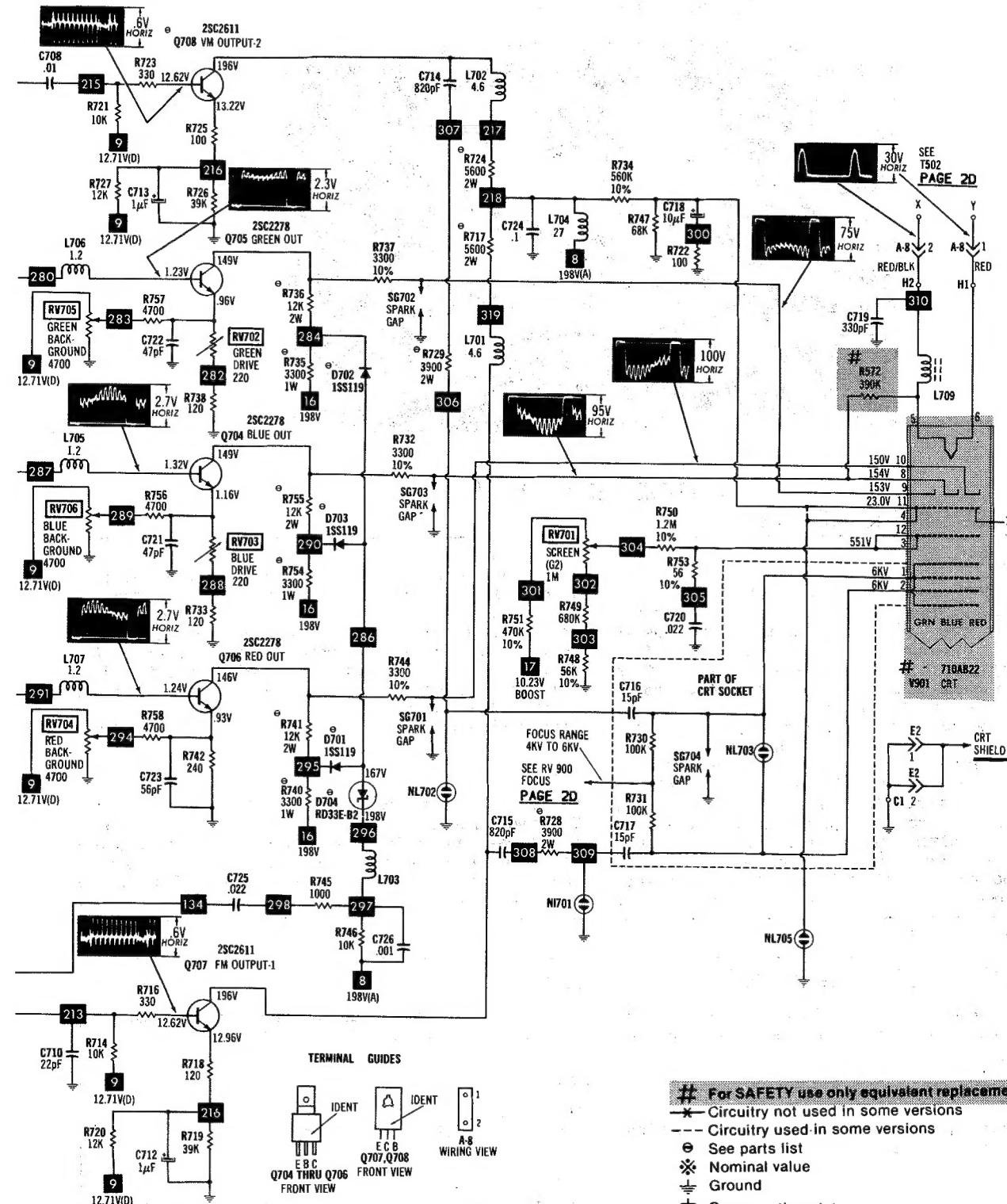
SET 2107 FOLDER 1



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G



For SAFETY use only equivalent replacement part.

- Circuitry not used in some versions
- - - Circuitry used in some versions
- ⊙ See parts list
- ⊛ Nominal value
- ⊥ Ground
- ▽ Common tie point

Waveforms: triggered scope, keyed rainbow generator

Item numbers in rectangles appear in the alignment/adjustment instructions.

Supply voltage maintained as shown at input.

Voltages measured with digital meter, no signal.

Controls adjusted for normal operation.

Terminal identification may not be found on unit.

Resistors are 1/2W or less, 5% unless noted.

Value in () used in some versions.

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H SET 2107 FOLDER 1

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TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain line voltage at 120VAC. Allow a 20-minute warm-up period for receiver and test equipment.

Suggested Alignment Tools: GC ELECTRONICS
T202,T203.....9296,9297,9300
T201,T204,T205,T206,T302,T6001,T6002.....9440
T606.....9293,9294

PRELIMINARY INSTRUCTIONS

Set the channel selector to the highest unused channel. Set scope sweep to external. Connect scope vertical input to scope vertical input on sweep/marker generator. Connect scope external horizontal input to scope horizontal input on sweep/marker generator. Ground test equipment to TV chassis unless specified otherwise. Use only enough generator output to provide a usable indication. Note: Response may vary slightly from that shown.

Connect a +5.2V bias to TP2 (Pin 39-IC201). Disconnect IF Input Plug J201.

VIDEO IF ALIGNMENT (SWEEP MARKER GENERATOR)

| DIRECT PROBE FROM SWEEP/MARKER GENERATOR | SWEEP GENERATOR OUTPUT | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | REMARKS |
|--|------------------------|---------------------------|--|--|
| To TP12 | To J201 (IF Input) | | 45.75MHz (Modulated) | Adjust T202 for Maximum gain. See Figure 1. NOTE: Use 45.75MHz modulated marker. |
| " | " | 44MHz (10MHz Sweep) | 41.25MHz 42.17MHz 44.00MHz 45.75MHz 47.25MHz | Adjust T201 and T206 for Maximum gain and symmetry of response. T201 and T206 affect overall response. See Figure 2. |

VIDEO IF ALIGNMENT (BAR SWEEP GENERATOR)

| BAR SWEEP GENERATOR | SCOPE INPUT | REMARKS |
|---------------------|-------------|---|
| To J201 (IF Input) | To TP12 | Perform Video IF Adjustments per SWEEP/MARKER GENERATOR instructions above. See Figure 3. |

SOUND IF ALIGNMENT

Tune in a station and adjust T204 and T205 for maximum sound. Reduce signal strength at the antenna terminals until distortion appears. Continue to reduce the signal while aligning for undistorted output by adjusting T205.

AUTOMATIC FINE TUNING ALIGNMENT

| Connect as explained in preliminary instructions unless specified otherwise. | | | | |
|--|------------------------|---------------------------|----------------------------|---|
| DIRECT PROBE FROM SWEEP/MARKER GENERATOR | SWEEP GENERATOR OUTPUT | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | REMARKS |
| To pin 5-Plug A17 | To J201 (IF-Input) | 44.00MHz (10MHz Sweep) | 45.75MHz | Adjust T203 to place 45.75MHz marker at peak of response. See Figure 4. |

TV ALIGNMENT INSTRUCTIONS (Continued)

CHROMA BANDPASS ALIGNMENT (SWEEP MARKER GENERATOR)

| Connect as explained in preliminary instructions. Set color control to maximum, tint control to midrange. | | | | |
|---|------------------------|---------------------------|-------------------------------|--|
| DETECTOR PROBE FROM SWEEP/MARKER GENERATOR | SWEEP GENERATOR OUTPUT | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | REMARKS |
| To TP3 (pin 6-IC301) | To J201 (IF-Input) | 44.00MHz (10MHz Sweep) | 3.08MHz 3.58MHz 4.08MHz | Adjust T302 for Maximum gain and symmetry of response. See Figure 5. |

CHROMA BANDPASS ALIGNMENT (BAR SWEEP GENERATOR)

| BAR SWEEP GENERATOR | SCOPE INPUT | REMARKS |
|---------------------|-----------------------|--|
| To J201 (IF-Input) | To TP3 (pin 6-IC301). | Perform CHROMA BANDPASS Adjustments per SWEEP/MARKER GENERATOR instructions above. See Figure 6. |

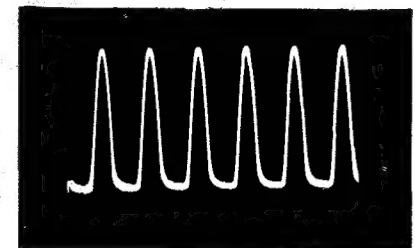


Figure 1

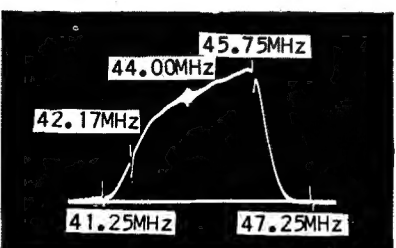


Figure 2

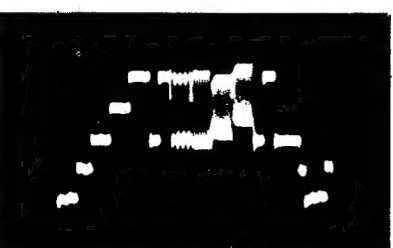


Figure 3

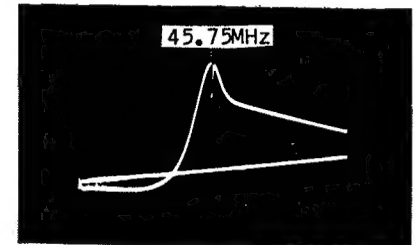


Figure 4

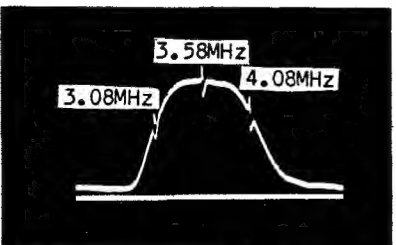


Figure 5

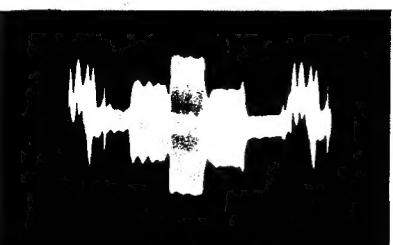


Figure 6

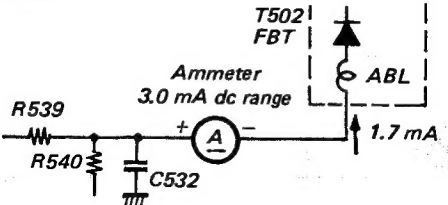
SERVICE INFORMATION

R572 ADJUSTMENT

When replacing the following components, make this adjustment.

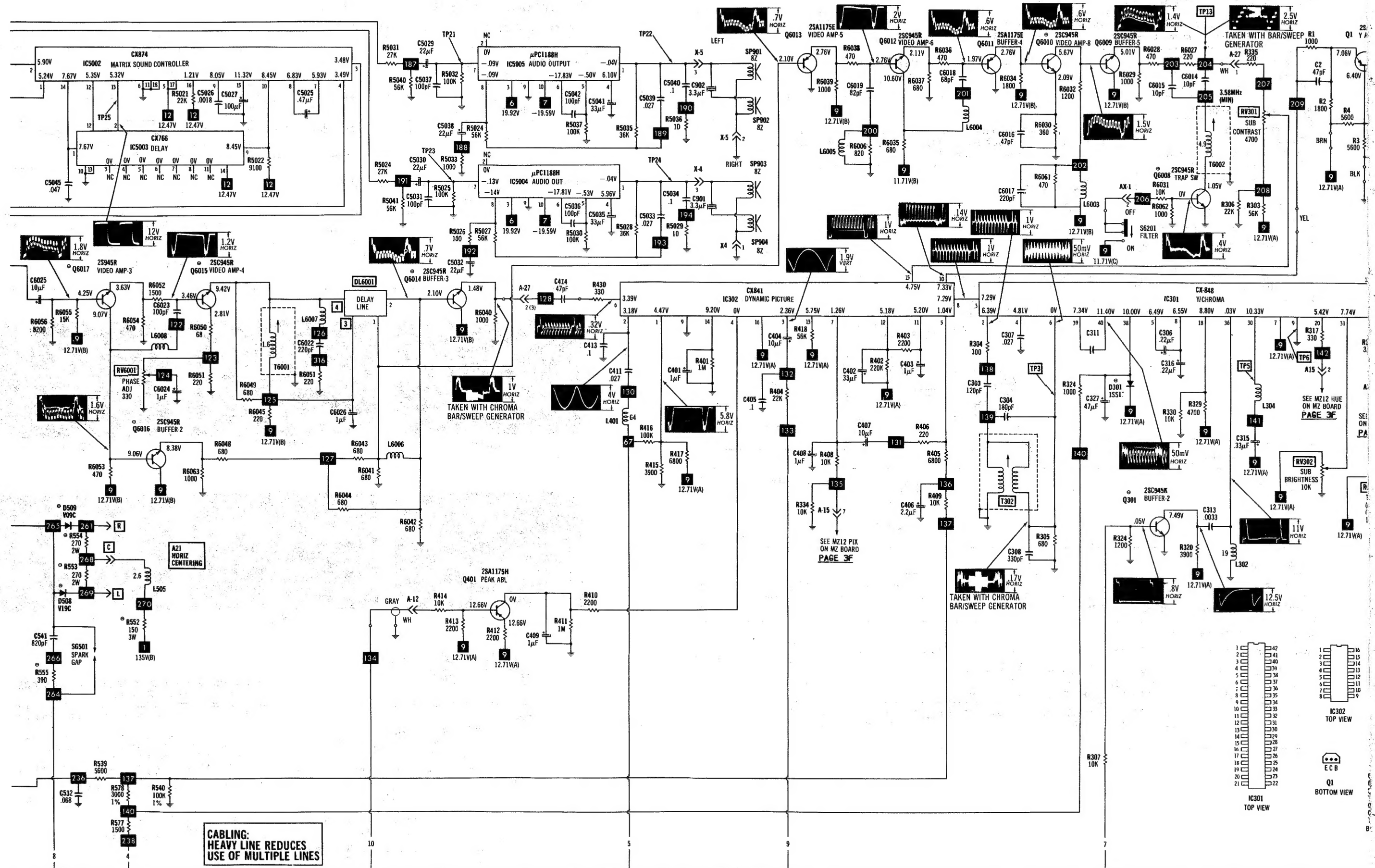
R572, D501, D510, IC501, Q505, Q506, R506, R507, R533, R536, R537, R538, R540, R562, R568, R577, R578, R590

1. Measure the ABL terminal current by the ammeter as shown.



2. Set PICTURE and BRIGHT control so that ABL terminal current is 1.7 mA dc.
3. Connect a regulated-dc power supply to the HV HOLD DOWN check point (TP85) and supply 15.2 ± 0.1 V dc.
4. When the dc voltage is supplied, confirm that the picture disappears and no sound is heard. (HV hold down circuit operates.) Note: As soon as HV hold down circuit operates, turn the POWER switch to OFF.
5. If above steps are not satisfied, select a resistance value of R572 and repeat above steps 3 and 4.
6. Disconnect the regulated-dc power supply and the ammeter.
7. Solder the ABL terminal of FBT.

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SAFETY PRECAUTIONS

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any). Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

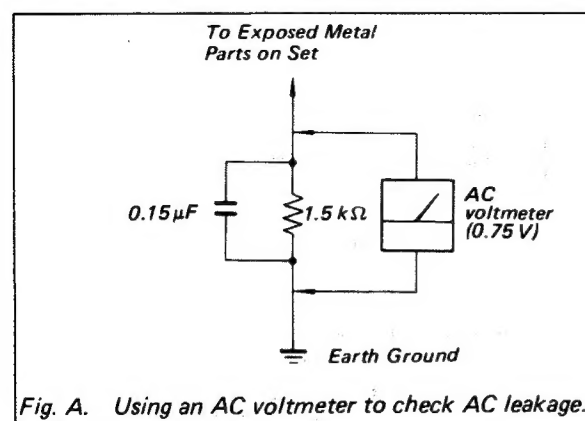


Fig. A. Using an AC voltmeter to check AC leakage.

Courtesy of the Manufacturer

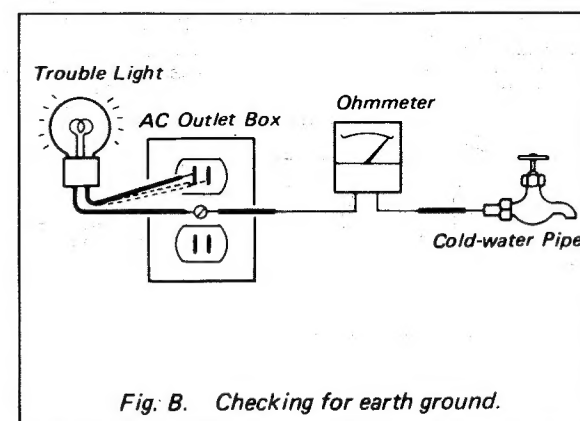


Fig. B. Checking for earth ground.

TROUBLESHOOTING AID

Note: Waveforms taken with triggered scope, Keyed-Rainbow generator. Schematic voltages measured with digital meter, no signal. Controls adjusted for normal operation.

PICTURE or SOUND

NO PIC, NO SOUND, NO RASTER: Check AC power supply and sources generated from Horizontal Output Transformer (T502). Refer to "Troubleshooting" Power Supply and Horizontal circuits.

NO PIC, NO SOUND, HAS RASTER: Check IF-AGC and source voltages from Horizontal Output Transformer (T502). Refer to "Troubleshooting" IF-AGC and Horizontal circuits.

NO PIC, HAS SOUND, NO RASTER: Check Horizontal Output Transformer (T502) sources and Video circuit. Refer to "Troubleshooting" Horizontal and Video circuits.

NO PIC, HAS SOUND, HAS RASTER: Refer to "Troubleshooting" Video circuit.

HAS PIC, NO SOUND: Refer to "Troubleshooting" Audio circuit.

OVERLOADED PICTURE: Refer to "Troubleshooting" IF-AGC circuit.

LOW OR EXCESSIVE BRIGHTNESS: Check Video and Luminance circuits. Refer to "Troubleshooting" Video circuit.

SWEEP

NO RASTER, HAS SOUND: Check HV rectifier, Part of Horizontal Output Transformer (T502). Refer to "Troubleshooting" Horizontal circuit.

NO RASTER, NO SOUND: Refer to "Troubleshooting" Horizontal circuit.

NO VERT DEFLECTION: Refer to "Troubleshooting" Vertical circuit.

POOR VERT LIN OR FOLDOVER: Refer to "Troubleshooting" Vertical circuit.

POOR HORIZ LIN OR FOLDOVER: Refer to "Troubleshooting" Horizontal circuit.

NARROW PICTURE: Refer to "Troubleshooting" Horizontal circuit.

VERT OFF FREQUENCY: Refer to "Troubleshooting" Vertical circuit.

HORIZ OFF FREQUENCY: Refer to "Troubleshooting" Horizontal circuit.

SYNC

NO VERT/HORIZ SYNC: Refer to "Troubleshooting" Sync circuit.

RASTER

YELLOW (NO BLUE): Check Chroma and Blue Output circuits. Refer to "Troubleshooting" Raster circuit.

CYAN (NO RED): Check Chroma and Red Output circuits. Refer to "Troubleshooting" Raster circuit.

MAGENTA (NO GREEN): Check Chroma and Green Output circuits. Refer to "Troubleshooting" Raster circuit.

COLOR (B/W operating normally)

NO COLOR: Refer to "Troubleshooting" Color circuit.

WEAK COLOR: Refer to "Troubleshooting" Color circuit.

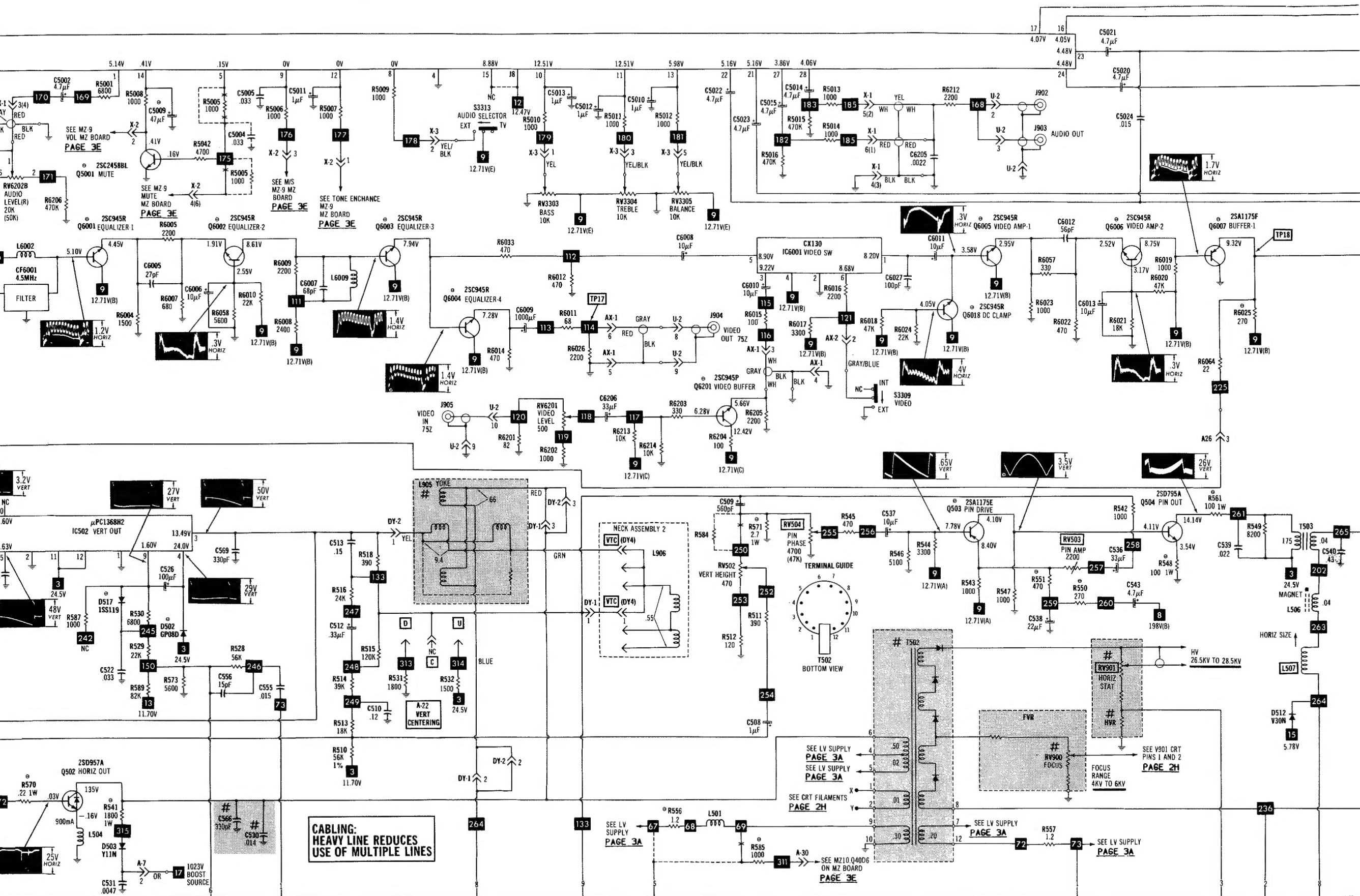
NO COLOR SYNC: Refer to "Troubleshooting" Color circuit.

NO GREEN: Check Chroma and Green Output circuits. Refer to "Troubleshooting" Raster circuit.

NO BLUE: Check Chroma and Blue Output circuits. Refer to "Troubleshooting" Raster circuit.

NO RED: Check Chroma and Red Output circuits. Refer to "Troubleshooting" Raster circuit.

INCORRECT HUE (TINT): Refer to "Troubleshooting" Color circuit.



TROUBLESHOOTING

POWER SUPPLY

Check AC Fuse (F601), If bad check Diodes D601 and D602, Converter Output Transistor (Q602). Replace any bad parts and the AC Fuse, check for short to ground. Apply 120V AC power and check for a horizontal waveform at the collector of Q602, If the waveform is absent, check the Converter Drive Transistor (Q601), check waveform at TP93D, note that the common tie point is not the chassis ground. Connect the ground lead of a VTVM to the common tie point and check for 10.06V at the base of the Current Limiter Transistor (Q605) and 9.52V at the emitter. Check for 21.1V at the collector of the Current Limiter Transistor (Q604). Check for 20.5V at the collector of Q601. Check for 325V at the collector of Q602 and for .14V at the emitter and .03V at the base. Check for 21.1V between the emitter and the collector of Current Limiter Transistor (Q604), check Diodes D604, D605 and D606. If the Pulse Amp Transistor (Q603) falls it may cause Q602 to fail. Check for 135V at TP97G and 14.12V at TP96F, 20.0V at TP99, -19.80V at TP98 and -26.3V at TP95E.

HORIZONTAL

Check for 135V at the collector of the Horizontal Output Transistor (Q502). Check for 12.7V at pin 17 of Sync/Vert Osc/ Horiz Osc IC (IC501) and 63.5V at the collector of Horizontal Drive Transistor (Q501). Inject a horizontal signal at the base of Transistor Q502. If the high voltage returns, check the voltages and waveforms at pins 1, 2, 3, 5, 6, and 18 on IC501 and check Transistor Q501, Zener Diode D514 and associated circuitry. If the high voltage is not present, check Transistor Q502, Diode D503 and associated circuitry. If these check out as normal, check the Horizontal Output Transformer (T502), the high voltage rectifier is part of the horizontal output transformer assembly, it may be defective. B+ sources developed from the horizontal output transformer can cause loading of the horizontal circuit. Check B+ sources rectified by Diodes D503, D504, D505 and D506. Check for 24.5V at TP96, 14.74V at TP92, 198V at TP95 and 12.71V at TP93. Poor horizontal linearity can be caused by the condition of Capacitors C566, C530, C540, C541 and Diodes D508, D509. Also check the pincushion circuit.

IF-AGC

Inject an IF signal at the IF Input (J201) and check for picture information on the CRT. If picture is present, check the tuner and tuner AGC circuit. If a picture is not present, check for 12.63V at pin 13 of VIF/SIF IC (IC201). Check for a video waveform at TP12 If the video waveform is present, refer to "Troubleshooting" Video circuit. If the video waveform is not present, apply AGC bias at pin 38 of IC201. If the video waveform returns, check pins 4, 5, 38, 39 of IC201. If the video waveform is still absent at pin 41 of IC201, check voltages and associate components of pins 2, 3, 8, 9, 10, 11, 32, 33, 36 and 40 of IC201. A defective AGC circuit can cause an overloaded picture, excessive snow or loss of picture and sound. See voltage chart on IC201 for AGC voltages with signal.

Voltages taken with Keyed-Rainbow generator unless otherwise noted.

| | | |
|--------|-------|-------|
| Pin 4 | 5.23V | IC201 |
| Pin 5 | 3.76V | |
| Pin 38 | 5.38V | |
| Pin 39 | 5.38V | |

AUDIO

Check for B+ at pins 21, 31 of VIF/SIF IC (IC201) with volume control at MINIMUM, the voltage at pin 16 of IC201 should be 0V and 11.0V with volume control at Maximum. Check for 12.47V at TP28, 19.92V at TP29 and -19.59V at TP30. Inject an audio signal at pin 1 Plug A19, check for sound with the volume up. If no audio, check voltage at pin 14 of User Controller IC (IC5001). It changes up to 6.00V with volume up and down to .50V with the volume all the way down. If the voltage does not change with volume up and down, check Mute Transistor (Q5001), IC5001 and associated circuitry and remote circuit. If there is no audio on the left side, inject an audio signal at TP21 and listen for audio from the left speaker. If no audio, check for a waveform at TP22, if waveform is not present, check Audio Output IC (IC5005) pins 3, 10, 4, 7 and associated components. If there is a waveform at TP22 and still no audio, check Speakers SP901 and SP902. If there is no audio on the right side inject the audio signal at TP23, check the waveform at TP24, check IC5004 pins 3, 10, 4, 7 and associated components. If no waveform at TP24, check Speakers SP903 and SP904. If no matrix sound, check Sound Controller IC (IC5002) pins 17, 7 thru 14 and check waveform at TP25 and check Delay IC (IC5003) pins 14, 9, 2, 12 and 1.

VIDEO

Check for 12.71V at TP91. Inject a video signal at TP12 and check for a video waveform at the base of Equalizer Transistor (Q6001). If the waveform is not there, check the Buffer Transistor (Q6019), Video Amp Transistor (Q6020), If the waveform is present, check the waveform at TP17. If the waveform is absent check Equalizer Transistors 1 thru 4 (Q6001 thru Q6004) and associated components. If the waveform is present, check the waveform at the base of Buffer-1 Transistor (Q6007), If the waveform is absent check the Video Switch IC (IC6001), DC Clamp Transistor (Q6018), Video Amp Transistors 1 and 2 (Q6005-Q6006). If the waveform is present, check waveform at TP18, If the waveform is not present, check Transistor Q6007, If the waveform is present, check waveform at base of Video Amp-5 Transistor (Q6013). If the waveform is not present, check Video Amp-3 Transistor (Q6017), Buffer-2 Transistor (Q6016), Video Amp-4 Transistor (Q6015) and associated circuitry. If the waveform is there, check for a waveform at TP13, If the waveform is absent, check Transistor Q6013, Video Amp-6 Transistor (Q6012), Buffer-4 Transistor (Q6011), Video Amp-8 Transistor (Q6010), Buffer-5 Transistor (Q6009) and associated circuitry. If the waveform is present at TP13, check for 12.71V at pin 16 of IC302. Check voltages and waveforms on Dynamic Picture IC (IC302). Check for a video waveform at pin 10 of IC302, if the waveform is there, check the waveform at pin 1 of Y, Chroma IC (IC301). Check voltages and

TROUBLESHOOTING (Continued)

waveforms on pins 32, 33, 34 of IC301, check for 12.71V at pins 7 and 10 of IC301 and check for 8.80V at pin 18. If waveforms are absent at pins 32, 33, 34 of IC301 check the IC and associated circuitry. Check the waveform at the base of the VM Amp-1 Transistor (Q701), VM Amp-2 Transistor (Q703), VM Out-1 Transistor (Q707), VM Out-2 Transistor (Q708) and Dynamic White Transistor (Q709). Check the waveform at the base of the Blue Output Transistor (Q704), Green Out Transistor (Q705), Red Out Transistor (Q706). Check waveforms at pins 8, 9 and 10 of the CRT, check the CRT and associated circuitry.

Inject a video signal at the video in Plug (J905) and check for video on the screen, with the video TV-External Switch at External position. If there is no video on the screen, check for a video waveform at pin 3 of Video Switch IC (IC6001). If the waveform is not there, check Video Buffer Transistor (Q6201) and associated circuitry. If the waveform is there, check for a waveform at the base of Video Amp-1 Transistor (Q6005) and pins 3, 4, and 6 of IC6001. If Filter Switch (S6201) has no action, check Trap Switch Transistor (Q608) and associated circuitry.

VERTICAL

Check for 11.70V at pin 14 of Sync/Vert Osc/ Horiz Osc IC (IC501) and check for 24.5V at pin 11 and 25.0V at pin 4 of Vert Out IC (IC502). Inject a vertical signal at pin 12 of IC501 and check for a vertical waveform at pin 8 of IC501. If waveform is absent, check voltages and waveforms on IC501 pins 9 thru 14. Check Diodes D513, D515 and associated circuitry. If the waveform is present at pin 8 of IC501 and still no vertical deflection on the CRT, check IC502 pins 3, 4, 7 voltages and waveforms, Diodes D502, D517, Electrolytic C525 and associated circuitry. Poor vertical linearity or foldover can be caused by vertical feedback and bias circuit, check Capacitors C523, C524, C514, C515, C569 and C563. Check Resistance Measurements Chart for possible changes in feedback bias circuitry.

SYNC

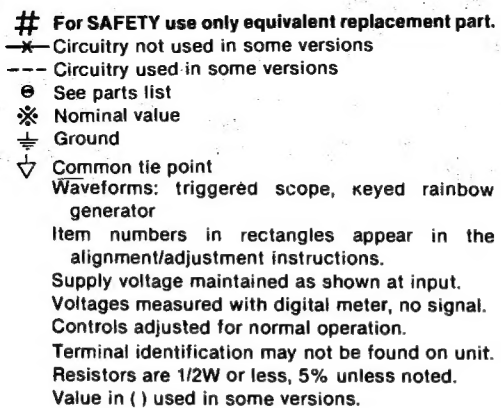
Check for a video waveform with horizontal and vertical sync signal at the base of Sync Sep Transistor (Q507) and check for the waveform at pin 16 of Sync/Vert Osc/ Horiz Osc IC (IC501). Check for the proper vertical waveform at pin 12 of IC501 and check for the proper horizontal waveform at pin 1 of IC501. If there is no horizontal or vertical sync on the CRT, check Q507, IC501 and associated circuitry. If there is no vertical sync, check Q507, Diode D515 and associated circuitry. If there is no horizontal sync, check IC501 and associated circuitry.

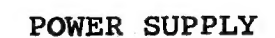
RASTER

Check CRT and check CRT voltages and waveforms. If there is missing color or can not set up B&W, check the voltages at Dynamic White Transistor (Q709) and check the Diodes D705, D706. If no blue (yellow raster) check the Blue Output Transistor (Q704), check pin 8 of the CRT (V901), check the CRT and check voltage and waveform at pin 32 of Y, Chroma IC (IC301) and associated circuitry. If no red (cyan raster) check the Red Output Transistor (Q706), check pin 10 of the CRT, check the CRT and check voltage and waveform at pin 34 of Y, Chroma IC (IC301) and associated circuitry. If no green (magenta raster) check the Green Output Transistor (Q705), check pin 9 of the CRT, check the CRT and check voltage and waveform at pin 34 of Y, Chroma IC (IC301) and associated circuitry.

COLOR

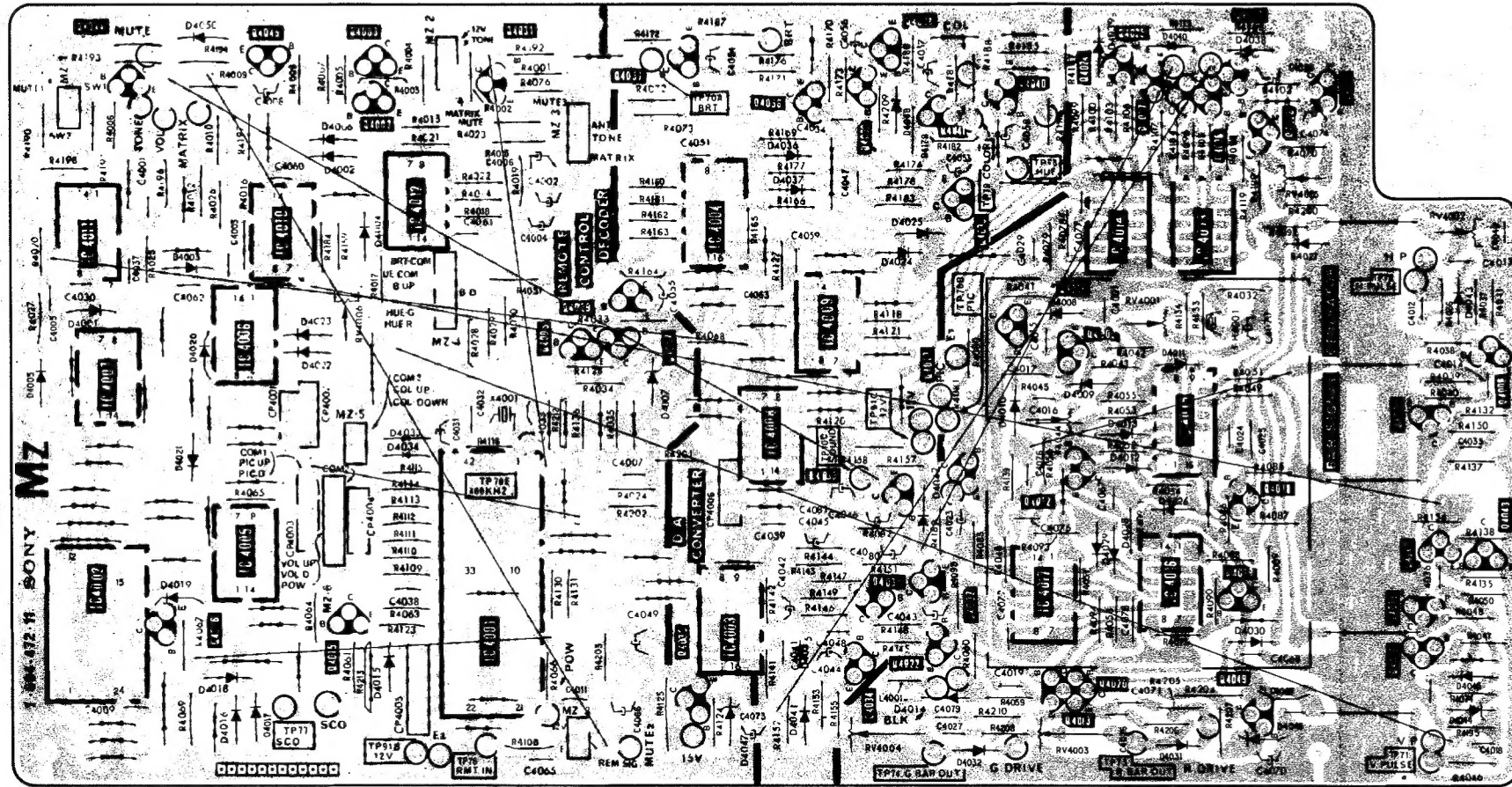
Inject a video signal at TP12(on the AX Board), check for a waveform at TP20 (on the AX Board). If the waveform is absent, check Buffer-3 Transistor (Q6014), check Delay Line (DL6001) and associated circuitry. If the waveform is present at TP20, check for a chroma waveform at pin 8 of Dynamic Picture IC (IC302). If the waveform is absent, check IC302 and associated circuitry. If the waveform is there, check for a chroma waveform at pin 6 of Y, Chroma IC (IC301). Check for an oscillation waveform at pin 13 of IC301 (14.3MHz, 4 times 3.58MHz). If the waveform is absent, check the 14.3MHz Osc Crystal (X301). If weak color, check waveforms at pins 3, 2, 6, 5, 8 of IC301, check for alignment of T302 and check Electrolytics C306, C316 and associated circuitry. If no color sync, check the waveform at pin 36 of IC301, if the waveform is absent check Buffer-2 Transistor (Q301) and IC301 and associated circuitry. Check for the right oscillator frequency at pin 13 of IC301, check the adjustment on Color Sync Control (CV301) and check associated components. If no green, check waveform at pin 33 of IC301, check waveform at the collector of the Green Output Transistor (Q705), check pin 9 on the CRT (V901), check the CRT and associated circuitry. If no blue, check waveform at pin 32 of IC301, check waveform at the collector of the Blue Output Transistor (Q704), check pin 8 of the CRT, check the CRT and associated circuitry. If no red, check waveform at pin 34 of IC301, check waveform at the collector of the Red Output Transistor (Q706), check pin 10 of the CRT, check the CRT and associated circuitry. If incorrect hue (tint), check IC301 pins 6, 11, 13, 15, 16 thru 36 and associated circuitry.





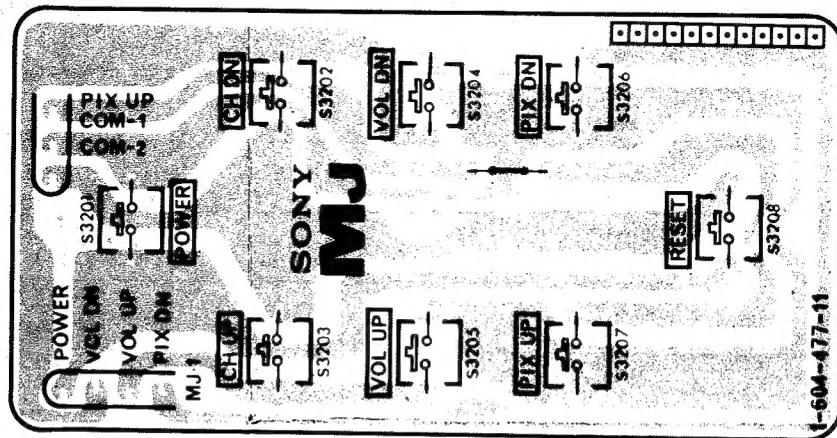
MZ

REMOTE CONTROL,
ANALOG CONTROL,
PICTURE TUBE
DISPLAY PROCESSOR



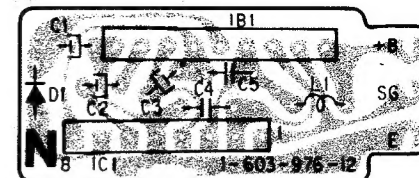
MJ

[CONTROL BUTTONS]



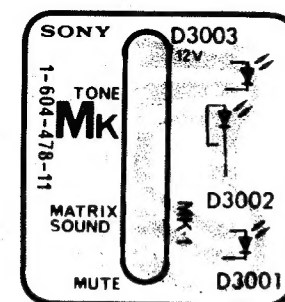
N

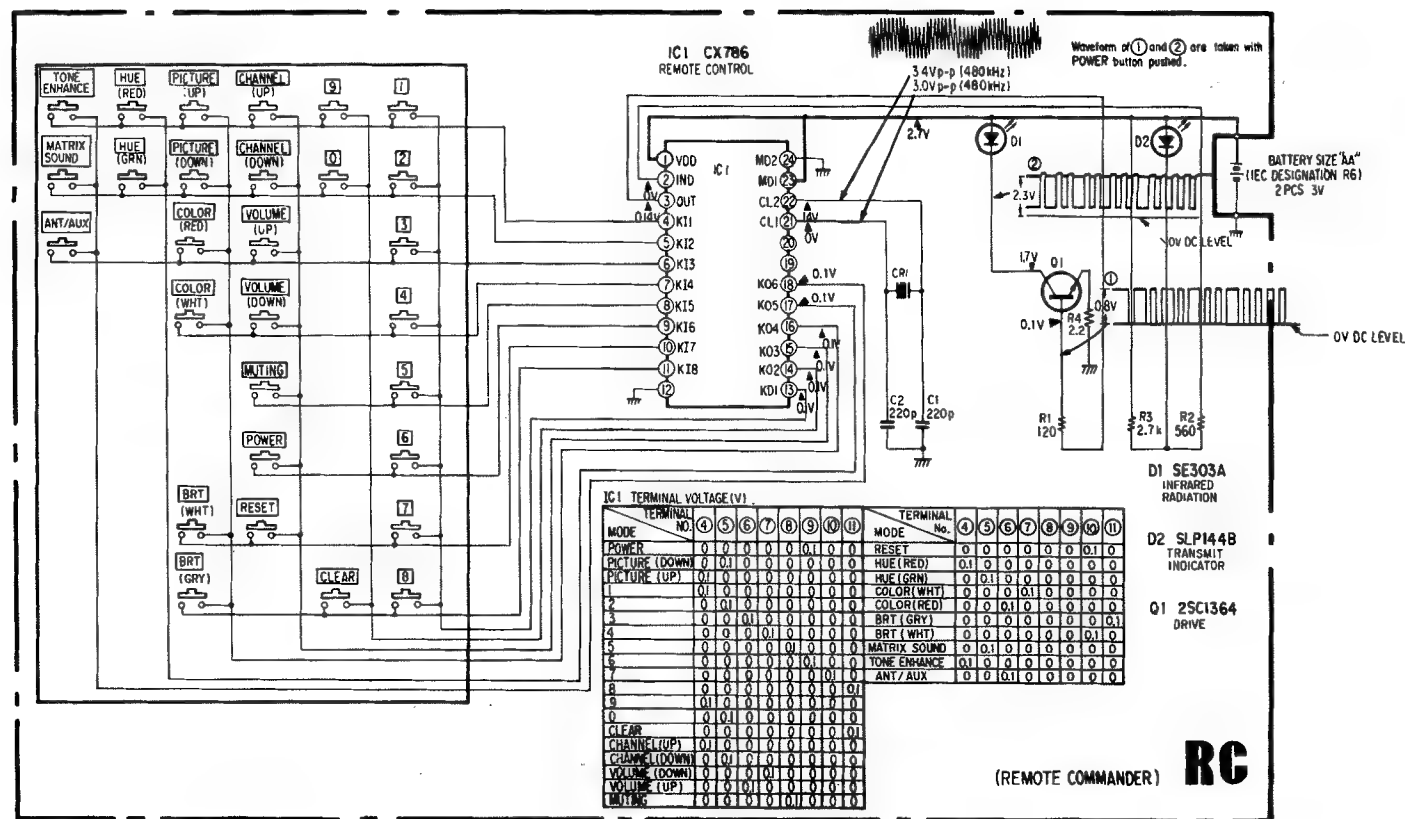
REMOTE CONTROL
HEAD AMP



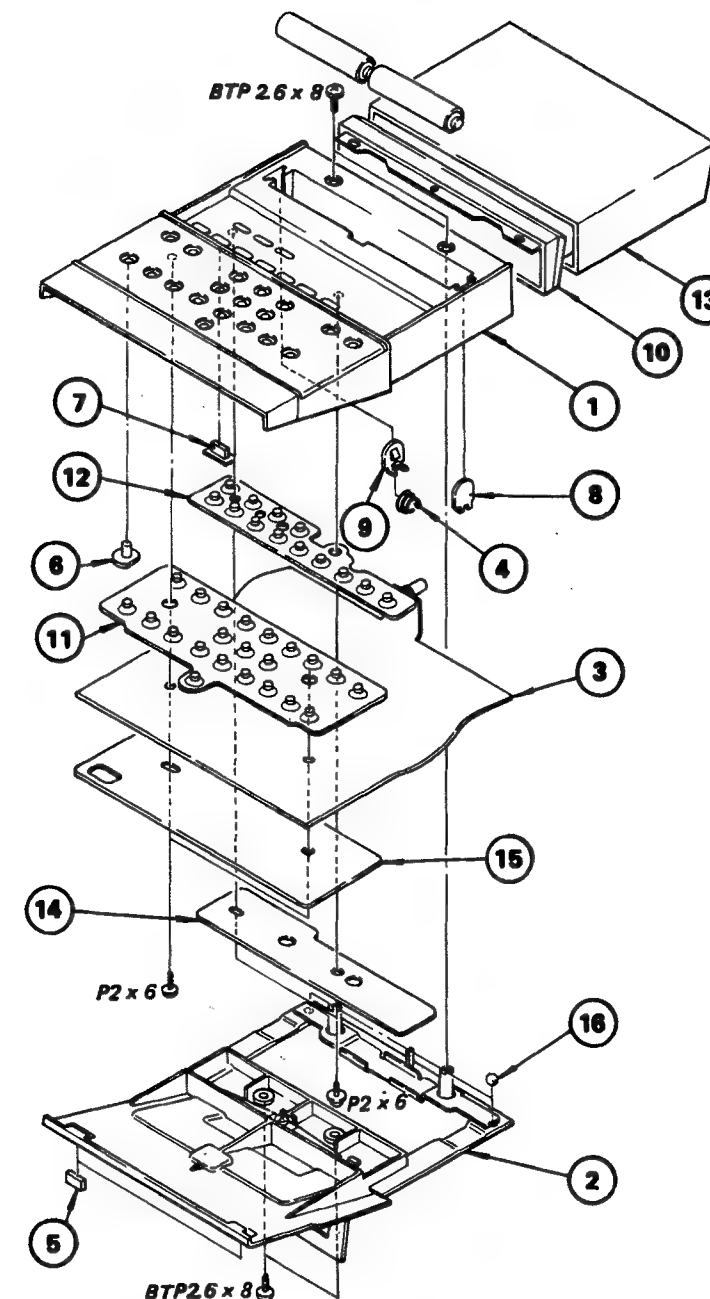
MK

[MODE INDICATOR]





EXPLODED VIEW



ELECTRICAL PARTS LIST

Ref.No Part No Description

1-604-956-00 RC BOARD

4-352-048-00 TERMINAL (A), BATTERY
4-352-049-00 TERMINAL (B), BATTERY

CAPACITOR

C1 1-161-315-00 CERAMIC 220PF 10% 50V
C2 1-161-315-00 CERAMIC 220PF 10% 50V

CRYSTAL

CR1 1-527-476-00 OSCILLATOR, CERAMIC

DIODE

D1 8-719-193-03 DIODE SE303AX
D2 8-719-901-44 DIODE SLP144B

IC

IC1 8-759-907-86 IC CX-786

TRANSISTOR

Q1 8-729-965-22 TRANSISTOR 2SC1652-P

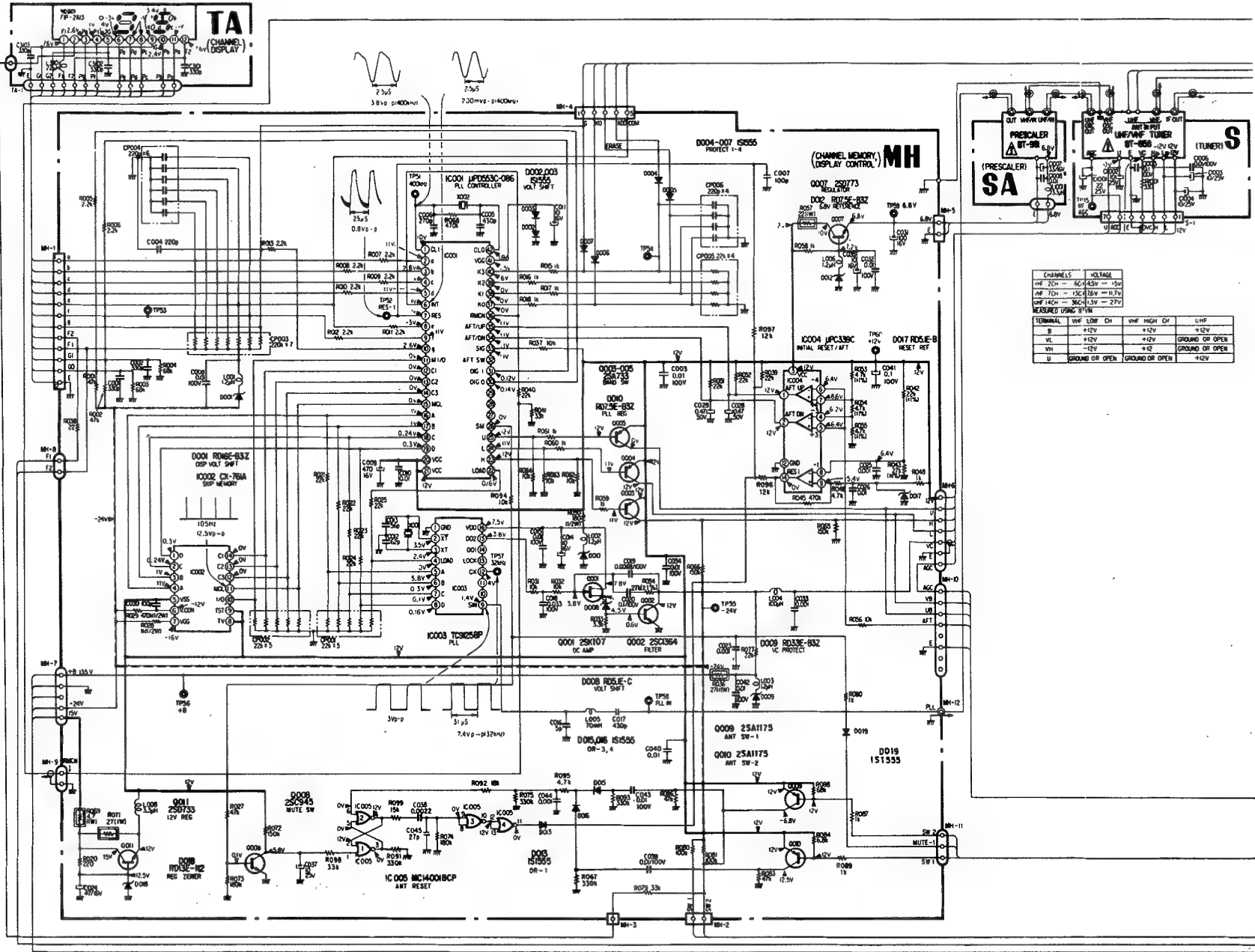
RESISTOR

R1 1-246-772-00 CARBON 120 5% 1/8W
R2 1-246-780-00 CARBON 560 5% 1/8W
R3 1-246-788-00 CARBON 2.7K 5% 1/8W
R4 1-246-751-00 CARBON 2.2 5% 1/8W

| No. | Part No | Description |
|-----|--------------|-----------------------|
| 1 | X-4352-013-0 | CASE ASSY, UPPER |
| 2 | X-4352-014-0 | CASE ASSY, LOWER |
| 3 | 1-604-956-00 | RC BOARD |
| 4 | 2-272-908-00 | SPRING (B) |
| 5 | 4-352-044-00 | FOOT, RUBBER |
| 6 | 4-352-045-00 | KEY TOP (A), TUNING |
| 7 | 4-352-046-00 | KEY TOP (B), TUNING |
| 8 | 4-352-048-00 | TERMINAL (A), BATTERY |

| Remark | No. | Part No | Description |
|--------|-----|--------------|-----------------------|
| | 9 | 4-532-049-00 | TERMINAL (B), BATTERY |
| | 10 | 4-352-054-00 | PLATE, FROSTED |
| | 11 | 4-352-055-00 | SHEET (A), RUBBER |
| | 12 | 4-352-056-00 | SHEET (B), RUBBER |
| | 13 | 4-352-058-00 | PANEL, SLIDE |
| | 14 | 4-352-062-00 | SPACER (B) |
| | 15 | 4-352-063-00 | SPACER (A) |
| | 16 | 7-671-114-01 | BALL 4, STEEL |

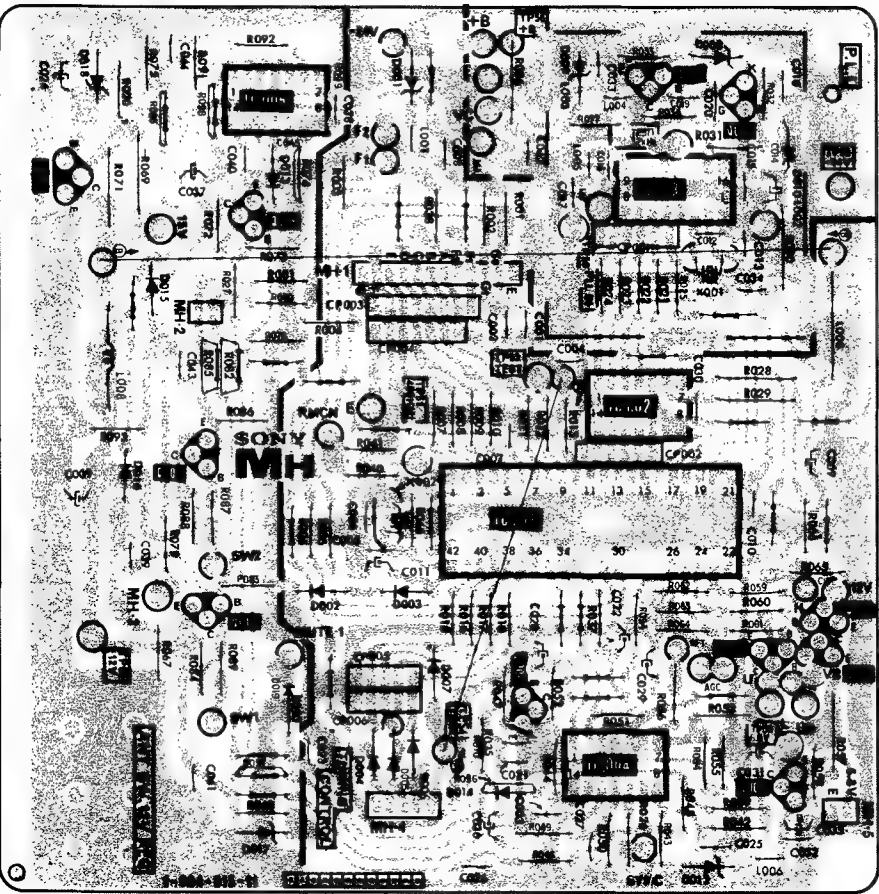
A



B

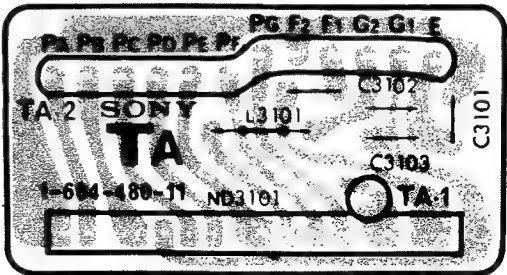
MH

[TUNING CONTROL]



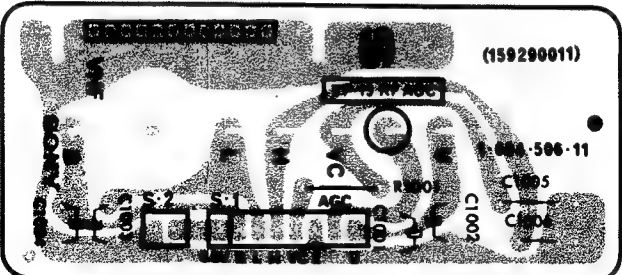
TA

[CHANNEL DISPLAY]



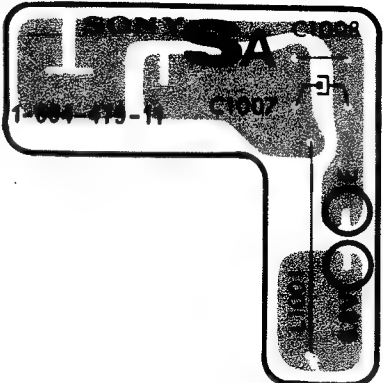
S

[TUNER]



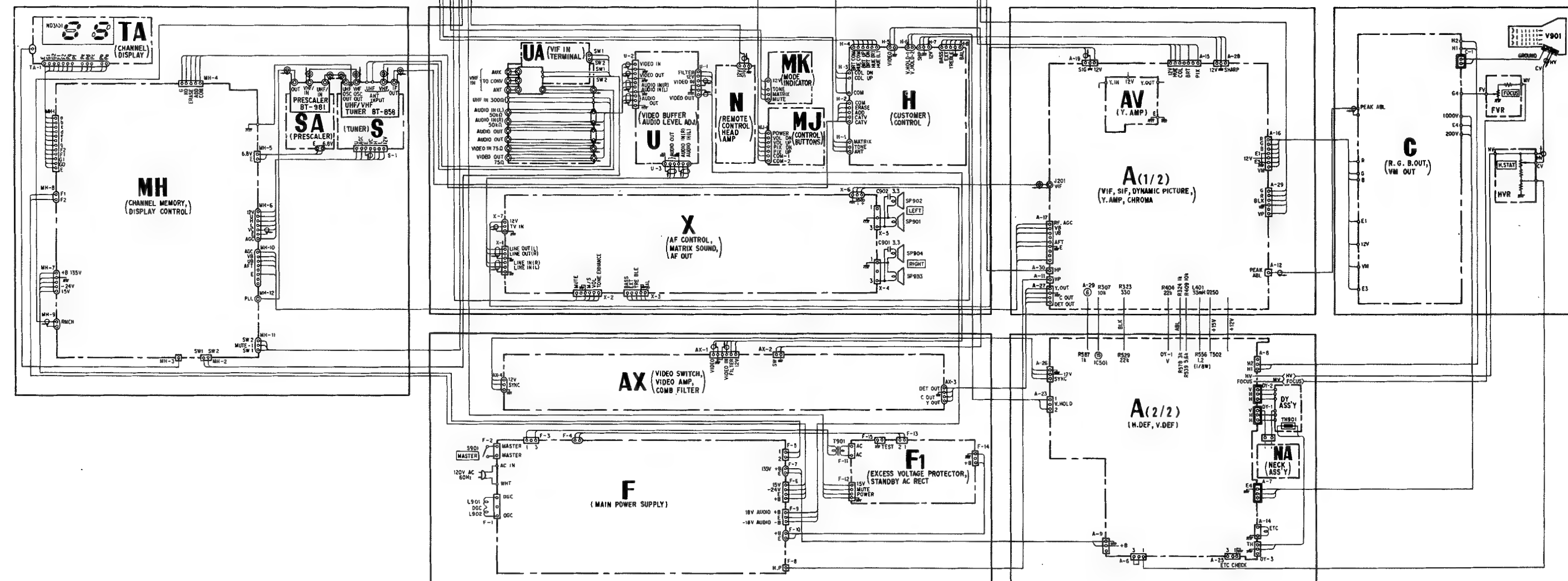
SA

[PRESCALER]





SET 2107 FOLDER 1



Courtesy of the Manufacturer

MISCELLANEOUS ADJUSTMENTS**CHANNEL PRETUNING**

1. Connect antenna.
2. Depress Master On Button.
3. Momentarily Depress Power Button.
4. Using Remote Transmitter, momentarily depress numbered Button for channel to be pretuned.
5. Momentarily depress Add Button on main control panel. Channel readout will momentarily change to --, indicating that command has been accepted.
6. Repeat steps 4 and 5 for each channel to be pretuned.
7. Removing undesired channel from program.
8. Select channel to be removed from program.
9. Momentarily depress Erase Button. Channel readout will momentarily change to --, indicating that command has been accepted.

HORIZONTAL SIZE ADJUSTMENT

Tune in a picture and adjust Horizontal Size Control (L507) for proper horizontal size.

HORIZONTAL CENTERING ADJUSTMENT

Move Connector A-21 to one of the terminals (L, C or R) at Horizontal Centering, whichever gives the best horizontal centering.

VERTICAL CENTERING ADJUSTMENT

Move Connector A-22 to one of the terminals (U, C or D) at Vertical Centering, whichever gives the best vertical centering.

VHF AND UHF RF AGC ADJUSTMENT

Tune in a medium strength VHF TV station. Turn RF-AGC-VHF Control (RV201) until snow appears and then back off until snow just disappears.

Tune in a medium strength UHF TV station. Turn RF-AGC-UHF Control (RV202) until snow appears and then back off until snow just disappears.

SUB BRIGHT ADJUSTMENT

Tune in a TV station. Set Color Control to MINIMUM, Picture Control to Maximum, Bright Control to midrange. Adjust Sub Brightness Control (RV302) for a suitable brightness. Set Picture Control to midrange, check all channels to see that brightness does not change excessively.

SUB CONTRAST ADJUSTMENT

Tune in a TV station. Set Picture and Brightness Controls to midrange. Adjust Sub Contrast Control (RV301) for suitable contrast. Check all channels to see that contrast does not change excessively.

ACC ADJUSTMENT

Tune in a strong TV station. Set Color and Picture Controls to midrange. Adjust ACC Control (RV303) for suitable color intensity.

COLOR TEMPERATURE ADJUSTMENT

Connect a crosshatch generator to the antenna terminals and tune in a crosshatch pattern. Set the Brightness and Picture Controls to MINIMUM. Turn Green (RV702) and Blue (RV703) Drive Controls to Maximum. Turn Blue (RV706), Green (RV705) and Red (RV704) Background Controls to midrange. Turn Screen Control (RV701) to obtain a faintly visible crosshatch pattern. Adjust Background Controls for best white balance on the faintly visible pattern. Turn the Brightness and Picture Controls to Maximum. Adjust the Drive controls for best white balance on the pattern. Check tracking at high and low brightness levels and repeat procedure if necessary.

COLOR SYNC ADJUSTMENT

Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Set Hue, Color and Picture Controls to mechanical center. Connect a 10K ohm resistor from TP5 to TP6 (Pin 30 to Pin 9 of IC301). Connect a jumper from TP8 to TP9 (Pin 15 to Pin 16 of IC301). Adjust CV301 until colors stop or slowly float. Remove resistor and jumper.

TINT CENTERING ADJUSTMENT (HUE)

Tune in a strong station. Set Hue Control to mechanical center. Adjust Hue Centering Control (RV304) for correct flesh tones.

HORIZONTAL FREQUENCY ADJUSTMENT

Tune in a station. Connect a .1MFD Capacitor from TP4 (Pin 16 to of IC501) to ground. Adjust Horizontal Frequency Control (RV501) until picture stops or slowly floats. Remove capacitor and check on all channels.

PINCUSHION ADJUSTMENT

Connect a color bar generator to the antenna terminals and tune in a crosshatch pattern. Adjust Pin Phase Control (RV504) and Pin Amp Control (RV503) for straight vertical lines at the sides of the screen.

CONVERTOR FREQUENCY ADJUSTMENT

Connect a color bar generator to the antenna terminals and set generator to purity position. Disconnect the horizontal pulse by removing the lead wire from terminal HP. Connect a Frequency Counter to Test Point TP39D. Adjust T606 for 15,734Hz \pm 50Hz. Reconnect lead wire at Terminal HP.

B+ CHECK

NOTE: Use a variable isolation transformer for this check. Connect a DC meter to TP97G, low side to ground. Set AC line voltage to 130V \pm 2V. Tune in a station and check meter reading. If meter does not read less than 136.4V DC, replace IC601.

MISCELLANEOUS ADJUSTMENTS (Continued)**COMB FILTER ADJUSTMENT**

Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Connect scope to TP-13. Adjust Phase Adjust Control (RV6001) and T6001 for MINIMUM 3.58MHz component.

3.58MHz TRAP ADJUSTMENT

Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Connect a jumper from Terminal 3 to Terminal 4 of DL6001. Set Filter/Normal Switch on antenna panel to filter position. Connect scope to TP13. Adjust T6002 for MINIMUM 3.58MHz component. Remove jumper.

CONVERGENCE ADJUSTMENTS

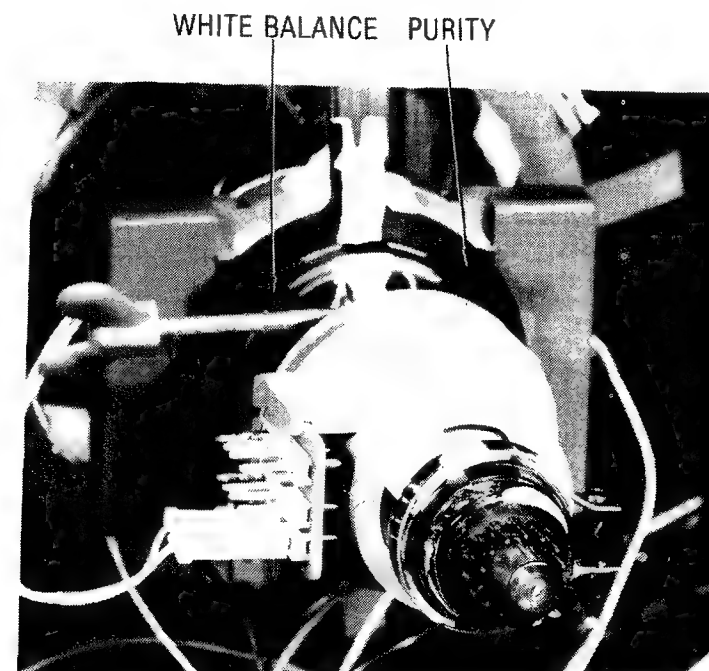
Connect a crosshatch generator to the antenna terminals and tune in a dot pattern. Adjust the Horizontal Static Control (RV901) to converge the red and blue dots horizontally over the green dot at the center of the screen. Rotate the vertical static magnets to converge the red and blue dots vertically over the green dot at the center of the screen. NOTE: Rotate the two Vertical Static Magnets equally, one to the right and one to the left from vertical position. NOTE: Some versions may use a BMC Magnet. To adjust the BMC Magnet slide it in and out to correct for insufficient horizontal static convergence. Rotate the BMC Magnet to correct for insufficient vertical static convergence. Place VTC (DY4) connector in any one of the three positions to converge the dots vertically.

Tune in a crosshatch pattern. If necessary, remove the rubber wedges between the deflection yoke and picture tube. Tilt the deflection yoke up or down to converge the vertical lines at the top and bottom of the screen and the horizontal lines at the right and left sides of the screen. Tilt the deflection yoke to the right or left to converge the horizontal lines at the top and bottom of the screen and vertical lines at the right and left sides of the screen. Replace the rubber wedges. To correct the convergence at the corners of the screen, slide a permalloy magnet assembly between the picture tube and the deflection yoke behind the areas affected on the screen. Position the permalloy assemblies for the best horizontal and vertical convergence correction in the corners affected.

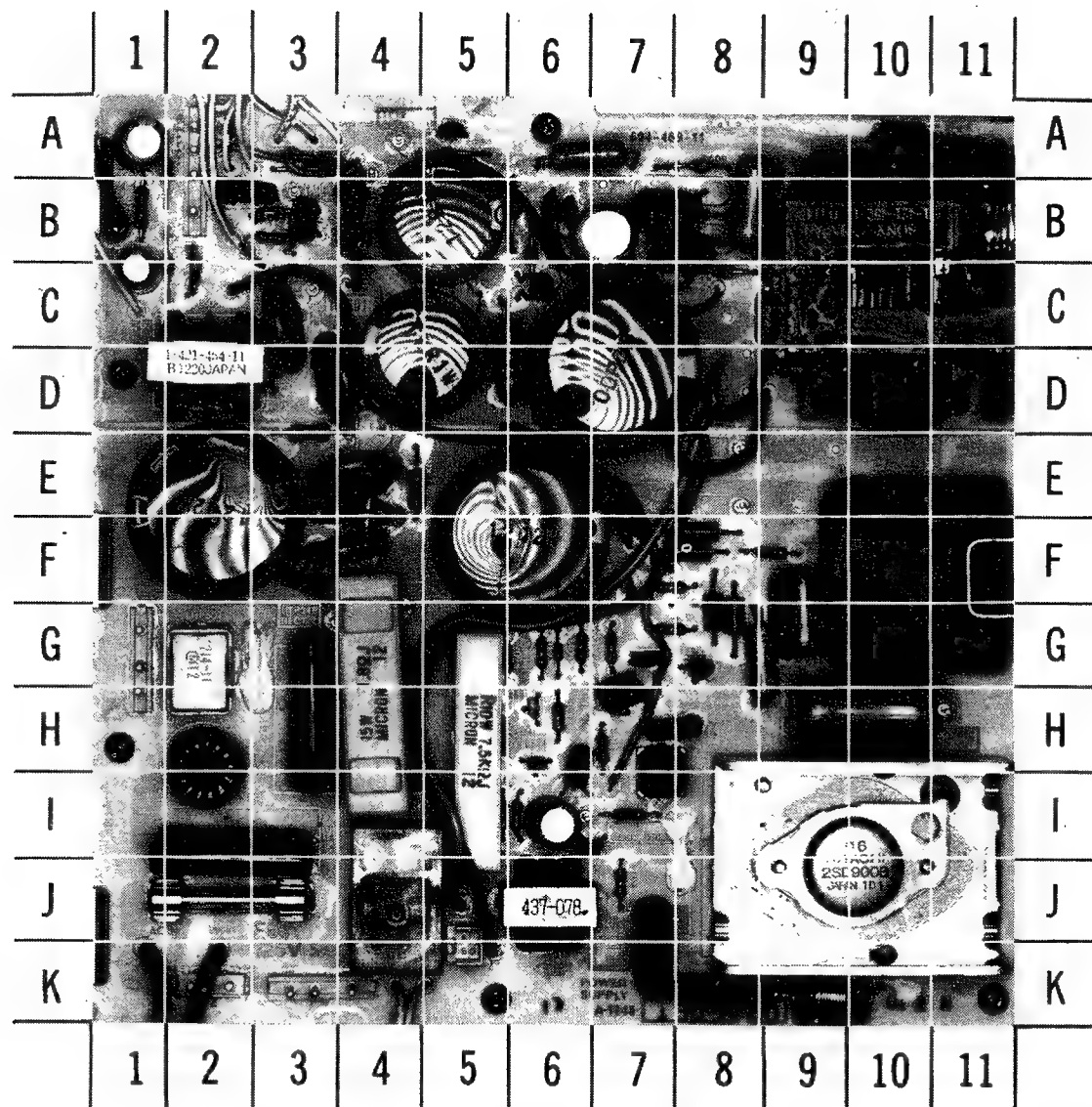
Repeat appropriate convergence procedures if necessary to obtain the best overall convergence.

PURITY ADJUSTMENTS

If the picture tube appears to be magnetized, use a degaussing coil to demagnetize picture tube and mounting brackets. Loosen deflection yoke and slide it forward as far as possible. Disconnect leads at B and G on C Board. Adjust purity rings on rear of deflection yoke to center the vertical red band. Slide the deflection yoke back until a uniform red screen is obtained. Reconnect leads at B and G. If necessary, use disc magnets to correct impurity at the corners of the screen. (See Parts List.) Place disc magnets at rear corners of the picture tube.



CRT NECK ASSEMBLY

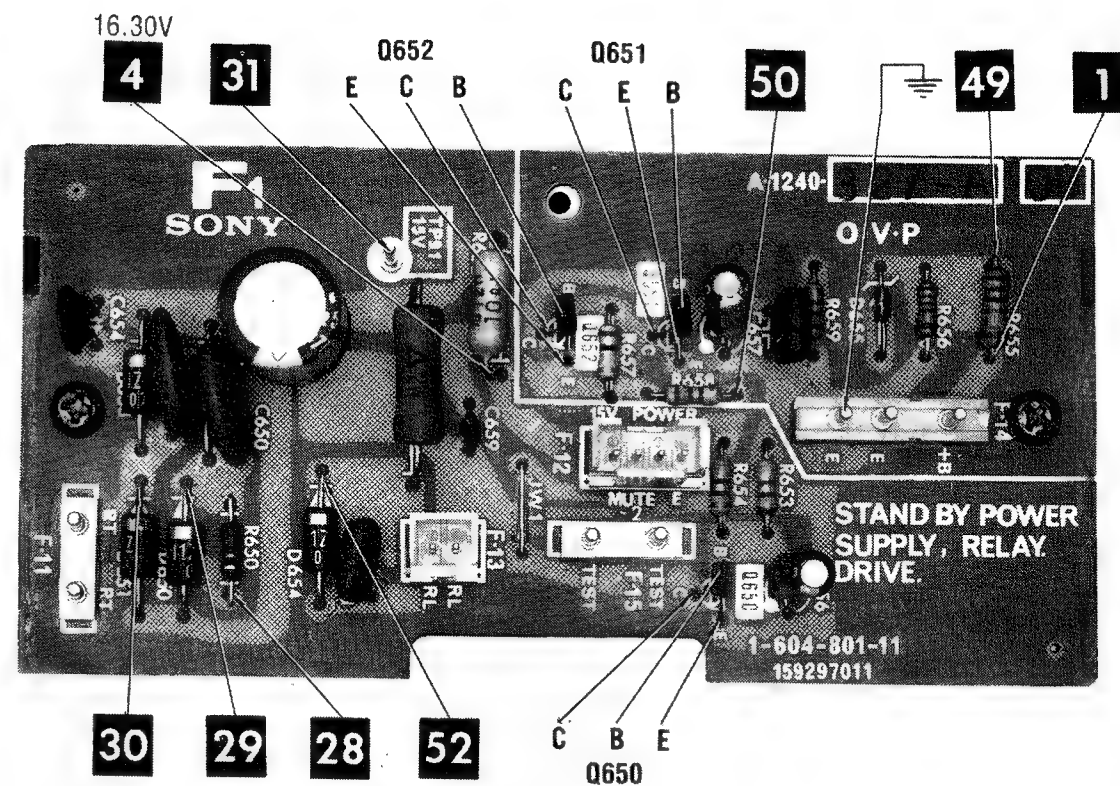


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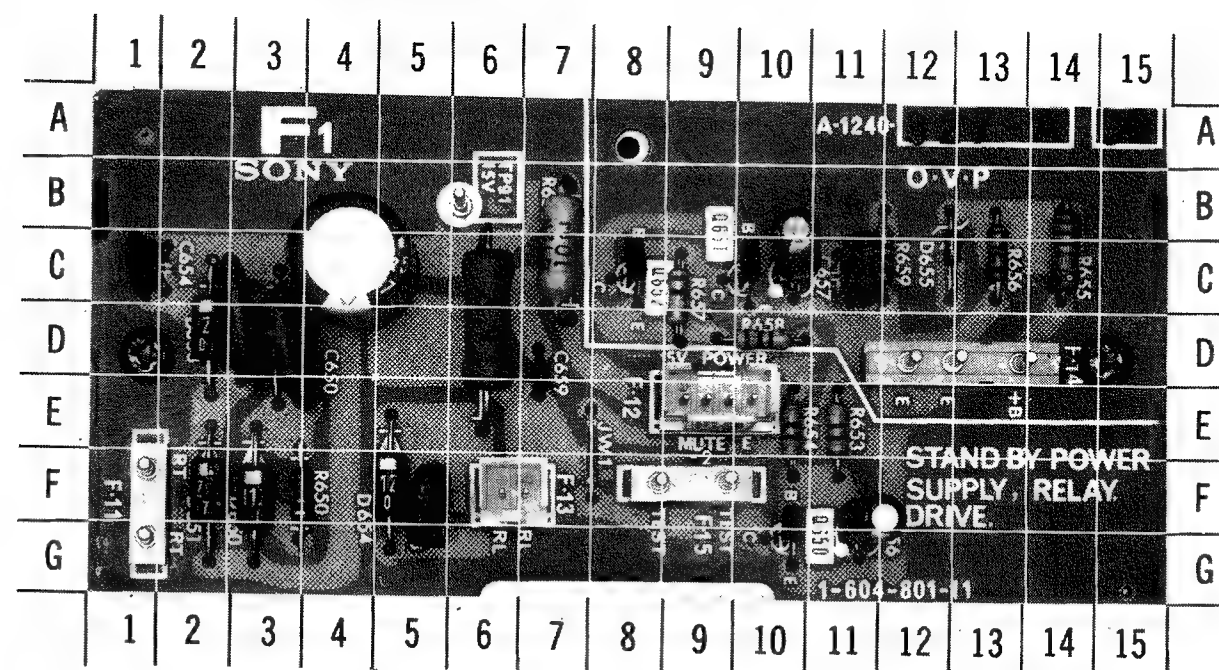
F BOARD

F BOARD GridTrace LOCATION GUIDE

| | | | | | | | | | |
|------|------|------|-----|-------|------|------|-----|--------|------|
| C601 | I-2 | C624 | B-5 | C613 | B-6 | R602 | E-4 | R625 | D-3 |
| C602 | H-3 | C625 | D-7 | C614 | A-5 | R603 | E-3 | R626 | A-6 |
| C603 | E-4 | C626 | B-2 | C615 | B-6 | R604 | H-5 | R627 | D-6 |
| C604 | F-4 | C627 | B-3 | C616 | A-11 | R606 | H-5 | R628 | B-3 |
| C605 | E-2 | C628 | G-7 | C617 | H-5 | R607 | G-6 | R629 | I-5 |
| C606 | F-6 | C629 | D-3 | C618 | F-8 | R608 | G-6 | R630 | B-3 |
| C607 | I-6 | C630 | A-5 | F-1 | G-1 | R609 | H-6 | THP601 | J-4 |
| C608 | H-7 | C631 | C-6 | F-2 | K-2 | R610 | G-6 | T601 | H-2 |
| C609 | H-7 | C632 | B-6 | F-3 | K-3 | R611 | I-6 | T602 | C-10 |
| C610 | I-6 | C665 | F-7 | F-5 | K-5 | R612 | G-7 | T603 | F-10 |
| C612 | F-7 | D601 | E-4 | F-6 | A-2 | R613 | H-7 | T604 | J-6 |
| C613 | H-10 | D602 | F-3 | F601 | J-2 | R614 | J-7 | T605 | D-2 |
| C614 | G-9 | D603 | G-6 | HP | C-1 | R615 | I-7 | T606 | H-7 |
| C615 | C-3 | D604 | G-8 | IC601 | B-4 | R616 | F-9 | TP91C | G-2 |
| C616 | C-1 | D605 | G-8 | L601 | C-9 | R617 | K-8 | TP92A | H-11 |
| C617 | A-1 | D606 | F-8 | L602 | K-9 | R618 | K-7 | TP93D | E-8 |
| C618 | A-10 | D607 | D-2 | Q601 | H-6 | R619 | G-7 | TP95E | I-6 |
| C619 | B-7 | D608 | D-2 | Q602 | J-10 | R620 | F-7 | TP96F | B-1 |
| C620 | B-8 | D609 | A-8 | Q603 | G-8 | R621 | G-9 | TP97G | A-4 |
| C621 | B-8 | D610 | C-8 | Q604 | H-6 | R622 | G-7 | TP98 | C-3 |
| C622 | B-7 | C611 | B-8 | Q605 | H-6 | R623 | C-2 | TP99 | A-4 |
| C623 | D-4 | C612 | B-6 | R601 | H-4 | R624 | B-1 | | B-3 |



A Howard W. Sams CIRCUITRACE® Photo



F1 BOARD

A Howard W. Sams GRIDTRACE™ Photo

F1 BOARD GridTrace LOCATION GUIDE

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| C650 | D-3 | C658 | C-11 | C655 | C-12 | Q651 | C-10 | R655 | C-14 |
| C651 | D-3 | C659 | D-7 | F-11 | F-1 | Q652 | C-8 | R656 | C-13 |
| C653 | F-5 | D650 | F-3 | F-12 | E-9 | R650 | F-4 | R657 | C-9 |
| C654 | C-1 | D651 | F-2 | F-13 | F-6 | R651 | D-6 | R658 | D-10 |
| C655 | C-4 | D652 | D-3 | F-14 | D-13 | R652 | C-7 | R659 | C-12 |
| C656 | F-11 | C653 | D-2 | F-15 | F-9 | R653 | E-11 | | |
| C657 | C-10 | C654 | F-5 | Q650 | F-10 | R654 | E-10 | | |

CIRCUIT DESCRIPTION

CONTROL CIRCUIT POWER MODULE (IC601)

The Power Module IC (IC601) detects the B+ voltage (135V) at pin 1 and feeds a control current from pin 4 to the control winding pins 13 and 14 of the Power Output Transformer (T602), to keep the 135V constant. When the B+ voltage (135V) increases, the voltage at pin 4 of IC601 will increase causing the control winding to saturate the Power Output Transformer which will decrease the output voltage. When the B+ voltage (135V) drops, the opposite action takes place.

OVER-VOLTAGE PROTECTION

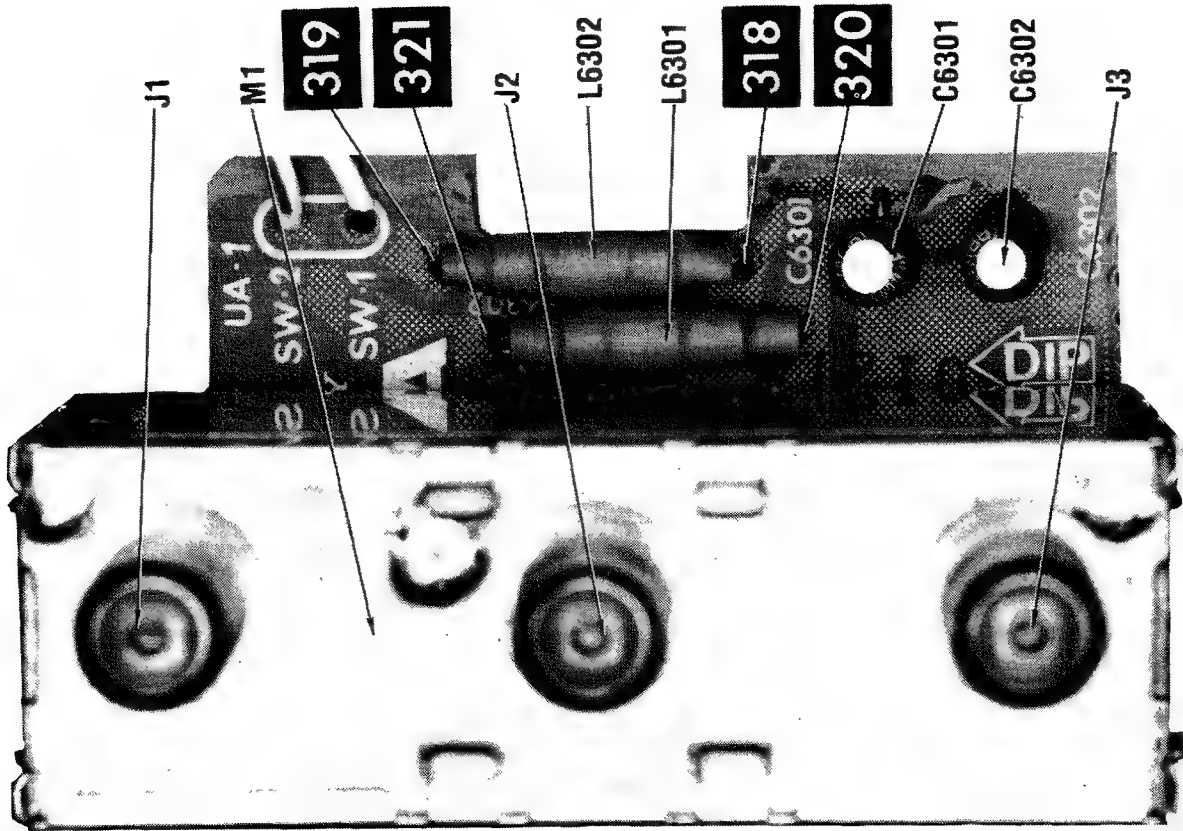
When B+ (135V) increases too high the Zener Diode D655 will conduct, as a result the excess voltage protector circuit Switch-2 Transistor (Q651) and Switch-1 Transistor (Q652) will be turned On causing a drop of the voltage at the base of the Relay Drive Transistor (Q650) which will turn the Sub-Power Supply Relay (RL601) Off. To help in isolating the problem, connect a jumper lead between the two Test pins of F-15. If the set comes On, troubleshoot the remote board. If the set will not come On, troubleshoot the power supply board.

HIGH VOLTAGE HOLD DOWN CIRCUIT

If the high voltage exceeds 28KV, the HV hold down circuit will be activated to shut down the set. The voltage at the base of the HV Hold Down Transistor (Q505) will rise over 13V, the Transistor Q505 will be turned On causing the HV Hold Down Transistor (Q506) to turn On, the current will flow through the Transistor Q506 across resistors R536 and R506 and apply voltage to pin 5 of Sync/Vert Osc/ Horiz Osc IC (IC501) which will shut down the predrive section of the horizontal circuit, that will shut down the set. To check voltages when the hold down circuit is activated, see voltage chart. If B+ will rise for any reason more than 125V, the voltage will increase at pin 6 of IC501 and shut down the predrive section of the horizontal circuit which will shutdown the set.

Voltages are taken while hold down circuit is activated.

| | |
|-----------------|--------|
| Base of Q505 | 14.60V |
| Emitter of Q505 | 14.20V |
| Emitter of Q506 | 13.60V |
| Pin 5 of IC501 | 5.46V |
| Pin 6 of IC501 | 5.60V |

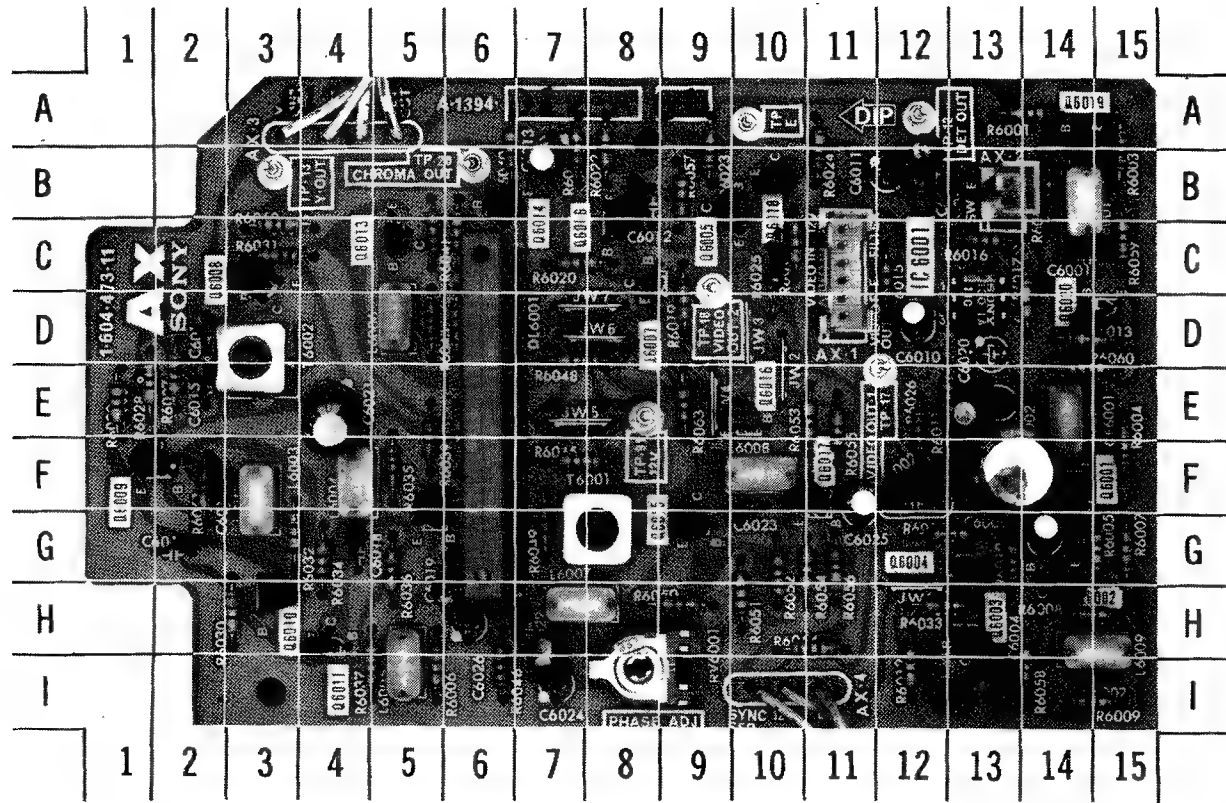


RESISTANCE MEASUREMENTS

MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS

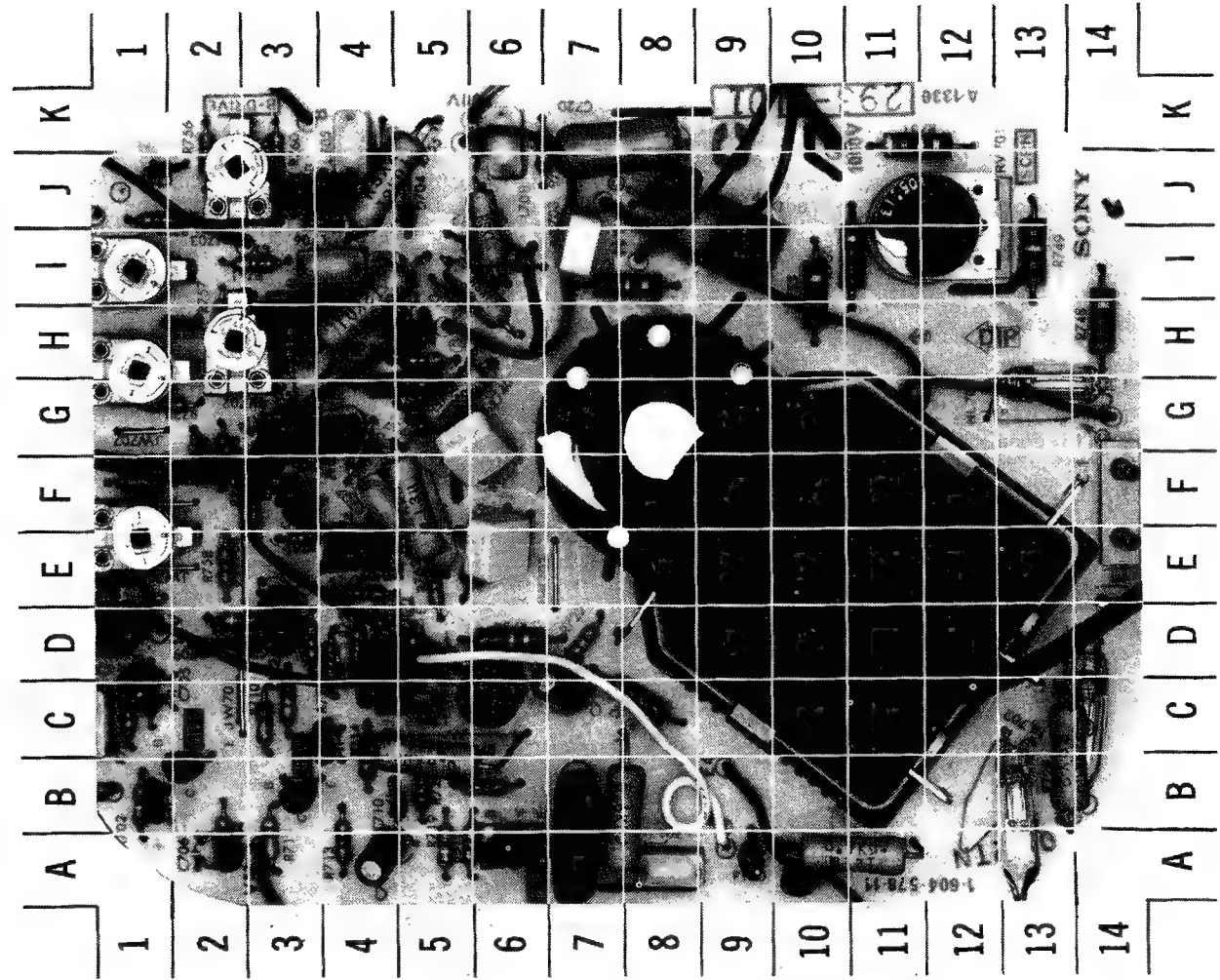
| ITEM | PIN 1 | PIN 2 | PIN 3 | PIN 4 | PIN 5 | PIN 6 | PIN 7 | PIN 8 | PIN 9 | PIN 10 | PIN 11 | PIN 12 | PIN 13 | PIN 14 |
|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|
| IC201 | 0 | 27K | 27K | 32K | 3290 | 0 | 0 | INF | 12K | 2100 | 2110 | 0 | 117 | 3470 |
| | PIN 15 | PIN 16 | PIN 17 | PIN 18 | PIN 19 | PIN 20 | PIN 21 | PIN 22 | PIN 23 | PIN 24 | PIN 25 | PIN 26 | PIN 27 | PIN 28 |
| | 35K | 355 | INF | 31K | 6500 | INF | 219 | 0 | 0 | 0 | 0 | 0 | .9 | INF |
| | PIN 29 | PIN 30 | PIN 31 | PIN 32 | PIN 33 | PIN 34 | PIN 35 | PIN 36 | PIN 37 | PIN 38 | PIN 39 | PIN 40 | PIN 41 | PIN 42 |
| | 2120 | 0 | 218 | 21K | 21K | 0 | 0 | INF | 330K | 138K | 99K | INF | INF | 0 |
| IC301 | 218K | 578 | INF | INF | 243K | 2.6 | 119 | 9850 | 0 | 119 | 16K | INF | 33K | INF |
| | PIN 15 | PIN 16 | PIN 17 | PIN 18 | PIN 19 | PIN 20 | PIN 21 | PIN 22 | PIN 23 | PIN 24 | PIN 25 | PIN 26 | PIN 27 | PIN 28 |
| | INF | INF | INF | 3260 | 435 | 11K | 10K | 9290 | 443 | 2180 | 2050 | INF | INF | INF |
| | PIN 29 | PIN 30 | PIN 31 | PIN 32 | PIN 33 | PIN 34 | PIN 35 | PIN 36 | PIN 37 | PIN 38 | PIN 39 | PIN 40 | PIN 41 | PIN 42 |
| | INF | 125K | 2010 | INF | 1.9M(1) | 1.9M(1) | 5590 | 19 | 83K | 29K | INF | INF | INF | INF |
| IC302 | 2390 | INF | INF | 985K | 45K | 15K | 20K | INF | 0 | 2910 | 23K | 24K | 57K | 970K |
| IC501 | 63K | 23K | 294 | 0 | 6980 | 77K | 0 | 1258 | 53K | 420K | 7590 | INF(1) | 6030 | 308 |
| | | | | | | | | | | | PIN 15 | PIN 16 | PIN 17 | PIN 18 |
| | | | | | | | | | | | 2050 | 96K | 9020 | 15K |
| IC502 | 0 | 0 | INF | INF | INF | INF | 1478 | 5820 | 30K | 45K | INF(1) | INF(1) | | |
| IC601 | 12K | 5220 | 0 | 105 | 571 | | | | | | | | | |
| IC5001 | 68K | 8560 | 69K | 0 | 9570 | 75K | 75K | 19K | 19K | 1112 | 1110 | 18K | 3510 | 12K |
| | PIN 15 | PIN 16 | PIN 17 | PIN 18 | PIN 19 | PIN 20 | PIN 21 | PIN 22 | PIN 23 | PIN 24 | PIN 25 | PIN 26 | PIN 27 | PIN 28 |
| | INF | 10K | 10K | 119 | 76K | 76K | 46K | 47K | 13K | 13K | 47K | 46K | 15K | 15K |
| IC5002 | INF | 79K | 13K | 13K | 118 | 0 | 51K | 50K | INF | 9100 | 0 | 902 | 898 | 35K |
| | | | | | | | | | | | PIN 15 | PIN 16 | PIN 17 | PIN 18 |
| | | | | | | | | | | | 197 | 22K | 119 | 0 |
| IC5003 | 35K | 898 | INF | INF | INF | INF | INF | INF | 9080 | 0 | INF | 901 | 0 | 119 |
| IC5004 | 7.36 | INF | 5500 | 30K | 99K | INF | 100K | 91K | 0 | INF | | | | |
| IC5005 | 7.42 | INF | 5500 | 30K | 99K | INF | 100K | 91K | 0 | INF | | | | |
| IC6001 | INF | 0 | 13K | 114 | 13K | 5640 | | | | | | | | |
| V1 | INF | INF | 2.3M | 69K | FIL | FIL | 69K | 650K | 650K | 650K | 69K | 2.3M | | |
| ITEM | E | B | C | | ITEM | E | B | C | | ITEM | E | B | C | |
| Q1 | 1910 | 2840 | 930 | | Q650 | 0 | 4690 | 6750 | | Q6005 | 444 | INF | 115 | |
| Q250 | 115 | 331 | 114 | | Q651 | 0 | 9800 | 109K | | Q6006 | 348 | 13K | 1110 | |
| Q301 | 0 | 1096 | 4010 | | Q652 | 9470 | 109K | 9800 | | Q6007 | 382 | 1110 | 0 | |
| Q401 | 333 | 2130 | 980K | | Q701 | 159 | 3070 | 124 | | Q6008 | 0 | 992 | INF | |
| Q402 | 985 | 930 | 115 | | Q703 | 450 | 89K | 479 | | Q6009 | 956 | 1317 | 115 | |
| Q501 | 0 | 356 | 15K | | Q704 | 276 | INF | 625K | | Q6010 | 359 | 1893 | 1318 | |
| Q502 | 0 | .31 | 13K | | Q705 | 240 | 1.6M(1) | 623K | | Q6011 | 1893 | 1146 | 0 | |
| Q503 | 1115 | 2050 | 1001 | | Q706 | 234 | 1.6M(1) | 621K | | Q6012 | 679 | 1581 | 795 | |
| Q504 | 99 | 1001 | INF | | Q707 | 9280 | 10K | 613K | | Q6013 | 1114 | 288 | 0 | |
| Q505 | INF | 155K | 23K | | Q708 | 9260 | 10K | 611K | | Q6014 | 1002 | 288 | 1150 | |
| Q506 | 17K | INF | 17K | | Q709 | 1198 | 1661 | 115 | | Q6015 | 191 | 2000 | 337 | |
| Q507 | 305 | 36K | 1211 | | Q801 | 89 | 2170 | 153 | | Q6016 | 575 | 580 | 115 | |
| Q601 | 0* | 940* | 24K* | | Q5001 | 0 | 56K | 11K | | Q6017 | 470 | 5270 | 580 | |
| Q602 | .3* | .2* | INF* | | Q6001 | 991 | 4400 | 115 | | Q6018 | INF | 15K | 115 | |
| Q603 | 0* | 471* | 24K* | | Q6002 | 573 | 4460 | 2540 | | Q6019 | 1001 | INF | 1096 | |
| Q604 | 0* | 4660* | 24K* | | Q6003 | 933 | 2540 | 115 | | Q6020 | 4130 | 1678 | 0 | |
| Q605 | 94K* | 13K* | 5660* | | Q6004 | 464 | 933 | 115 | | Q6201 | 2170 | 5280 | 214 | |

* With respect to the common tie point.
(1) Reading depends on polarity of meter connections.

A Howard W. Sams **GRIDTRACE™** Photo

AX BOARD

AX BOARD GridTrace LOCATION GUIDE

[illegible]A Howard W. Sams **GRIDTRACE™** Photo

C BOARD

C-BOARD GridTrace LOCATION GUIDE

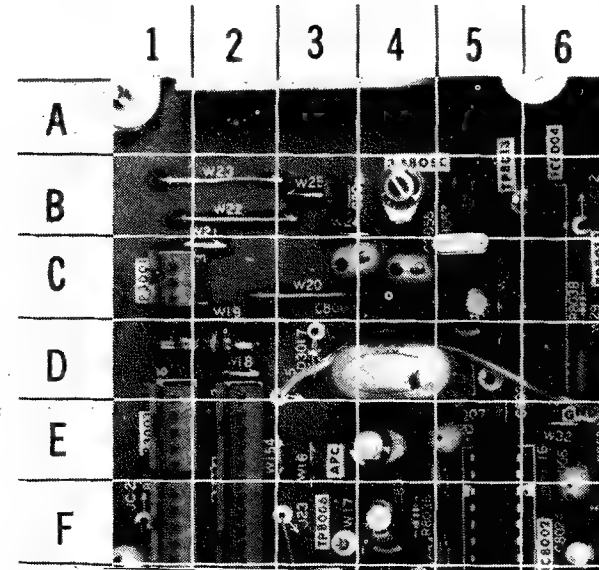
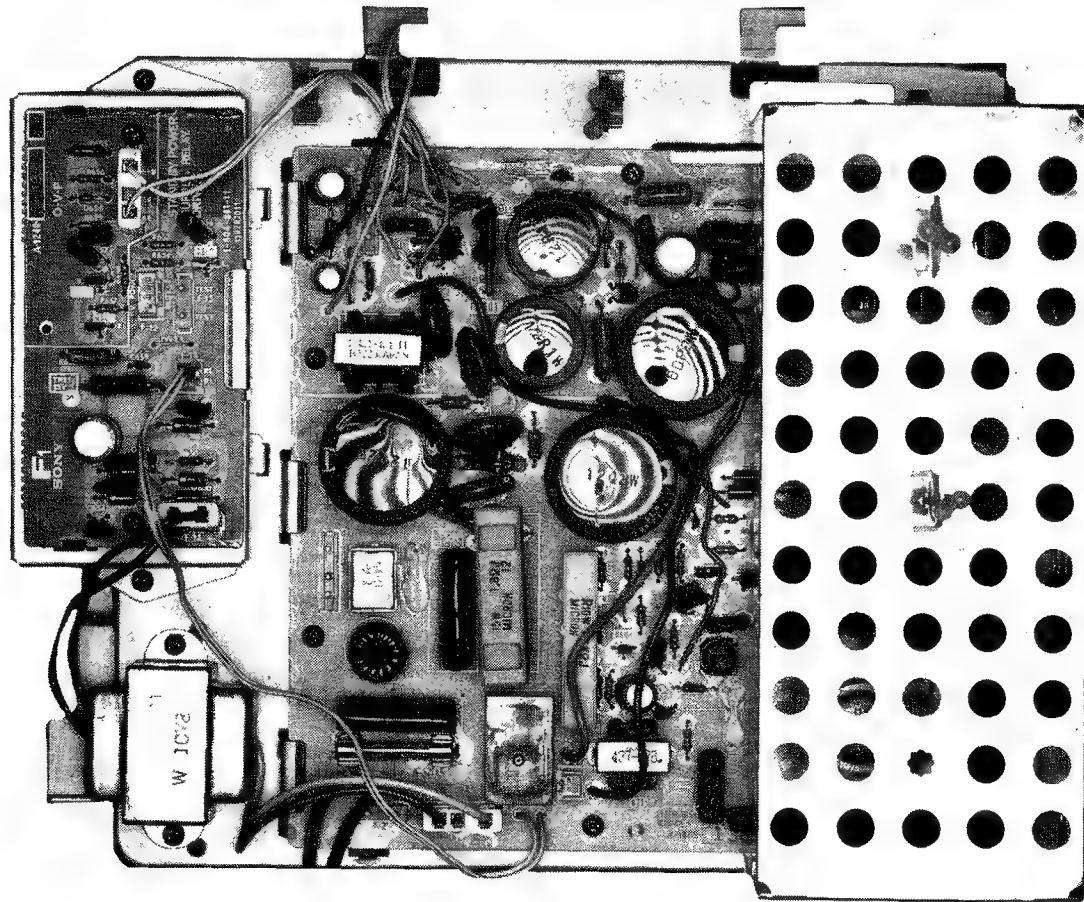
| | | | | |
|-------|------|------|-------|------|
| C701 | B-1 | Q707 | R756 | K-2 |
| C702 | D-1 | Q708 | R757 | H-2 |
| C703 | D-1 | Q709 | R758 | E-2 |
| C705 | C-1 | R701 | R759 | K-7 |
| C706 | A-2 | R702 | R760 | K-3 |
| C708 | D-2 | R703 | R761 | I-3 |
| C709 | D-2 | R704 | R762 | E-5 |
| C710 | B-4 | R710 | R763 | G-4 |
| C711 | C-3 | R711 | R764 | G-3 |
| C712 | A-4 | R712 | R765 | G-2 |
| C713 | D-3 | R713 | R766 | E-3 |
| C714 | A-9 | R714 | R767 | F-3 |
| C715 | A-10 | R716 | RV701 | I-12 |
| C718 | C-7 | R717 | RV702 | H-2 |
| C719 | J-8 | R718 | RV703 | J-2 |
| C720 | K-7 | R719 | RV704 | E-1 |
| C721 | J-1 | R720 | RV705 | H-1 |
| C722 | H-2 | R721 | RV706 | I-1 |
| C723 | G-2 | R722 | SG701 | E-6 |
| C724 | A-7 | R723 | SG702 | G-6 |
| C725 | G-3 | R724 | SG703 | I-7 |
| C726 | H-5 | R725 | | |
| C726 | E-13 | R726 | | |
| C7301 | G-5 | R727 | | |
| D701 | I-5 | R728 | | |
| D702 | J-4 | R729 | | |
| D703 | J-5 | R732 | | |
| D704 | F-4 | R733 | | |
| D705 | H-4 | R734 | | |
| D706 | F-14 | R735 | | |
| E-2 | A-8 | R736 | | |
| L701 | C-5 | R737 | | |
| L702 | I-4 | R738 | | |
| L703 | C-6 | R740 | | |
| L704 | K-4 | R741 | | |
| L705 | I-4 | R742 | | |
| L706 | F-4 | R744 | | |
| L707 | K-6 | R745 | | |
| L708 | I-9 | R746 | | |
| L709 | C-1 | R747 | | |
| L710 | C-14 | R748 | | |
| NL701 | B-13 | R749 | | |
| NL702 | G-13 | R750 | | |
| NL705 | B-2 | R751 | | |
| Q701 | B-3 | R752 | | |
| Q703 | J-3 | R753 | | |
| Q704 | H-3 | R754 | | |
| Q705 | E-4 | R755 | | |
| Q706 | | | | |

GRIDTRACE INSTRUCTIONS

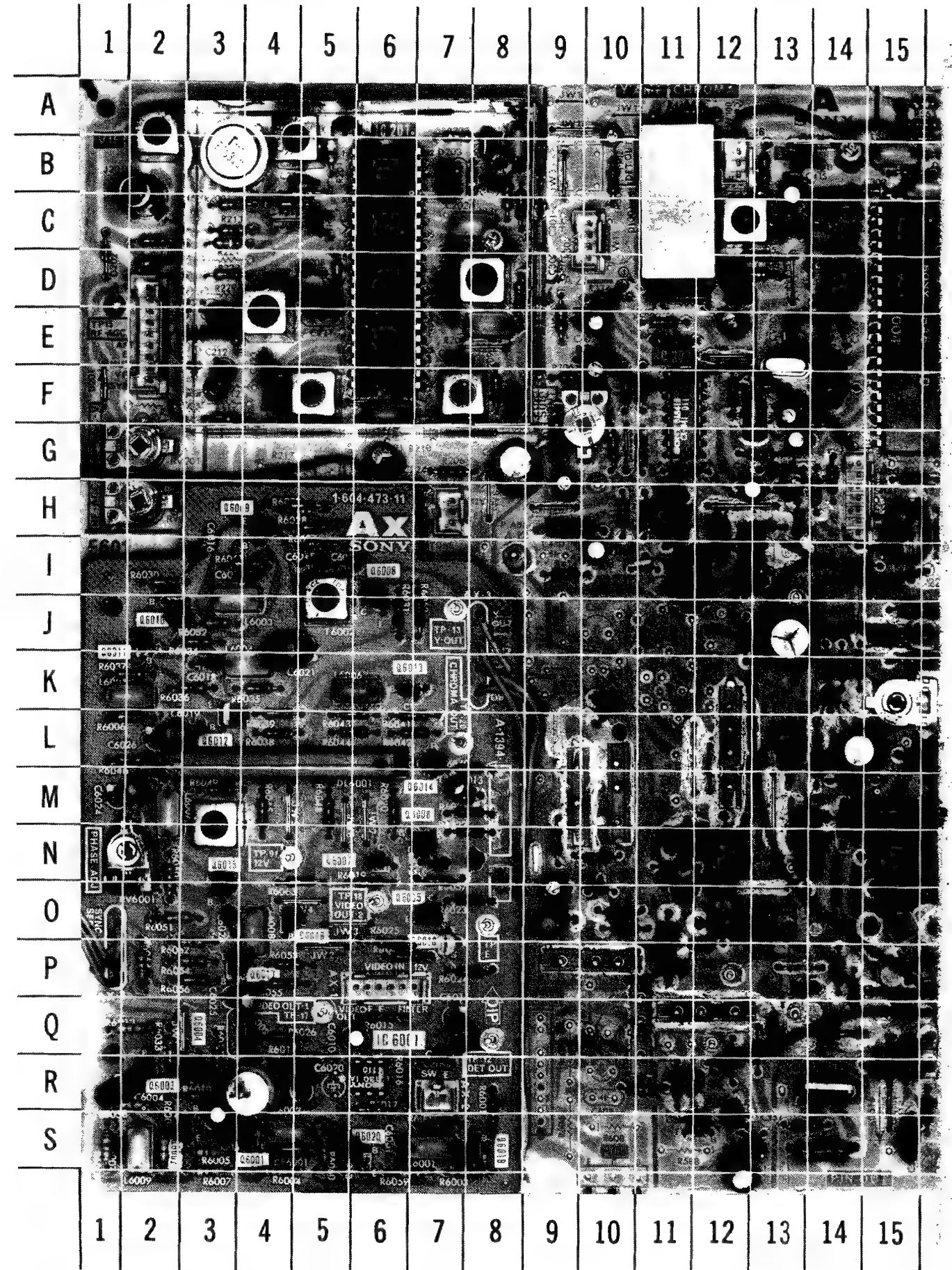
1. Locate item numbers and grid coordinates on GridTrace location guide.
2. Locate component on GridTrace photo using grid coordinates.
3. Item numbers on PC Board are used for positive identification of components.

GRIDTRACE LOCATION GUIDE

| | | | |
|-------|-----|--------|-----|
| C8022 | F-6 | D3017 | D-3 |
| C8024 | F-6 | IC8002 | F-5 |
| C8025 | F-6 | IC8004 | B-6 |
| C8028 | D-6 | L8006 | E-6 |
| C8030 | E-4 | L8007 | E-5 |
| C8031 | D-4 | L8011 | C-3 |
| C8032 | E-5 | L8012 | C-4 |
| C8033 | F-4 | P3001 | C-1 |
| C8034 | F-4 | P3003 | E-1 |
| C8035 | E-4 | P3006 | E-2 |
| C8050 | C-4 | R3212 | D-2 |
| C8051 | C-5 | R8032 | F-6 |
| C8053 | B-5 | R8036 | F-4 |
| C8054 | B-5 | TP8006 | F-3 |
| C8055 | B-4 | TP8013 | B-5 |
| C8056 | B-4 | X8001 | D-4 |
| C8061 | B-3 | X8002 | C-5 |

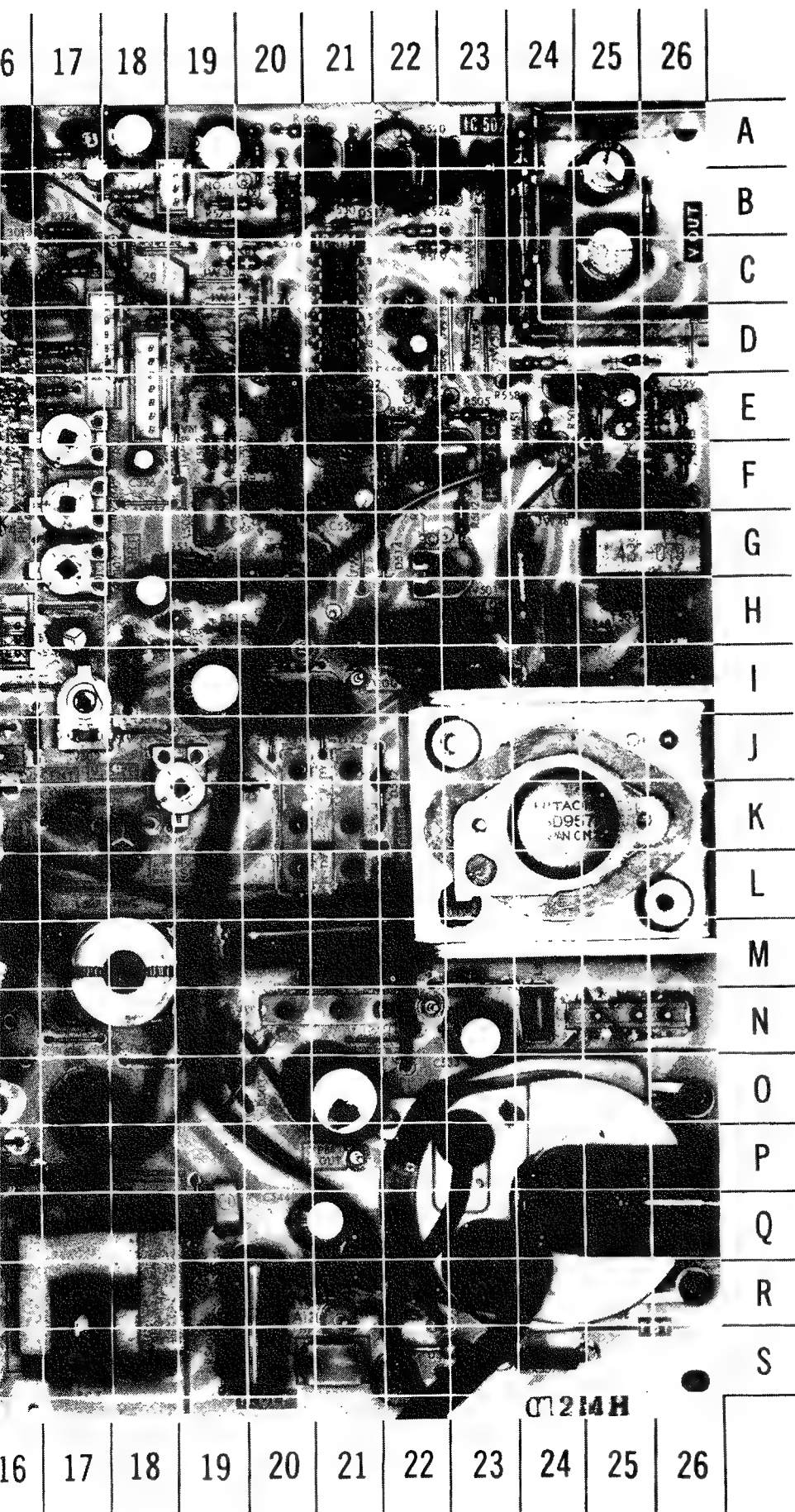
A Howard W. Sams **GRIDTRACE™** Photo

F BOARD-SHIELD LOCATION



A BOARD

A Howard W. Sams **GRIDTRACE™** Photo

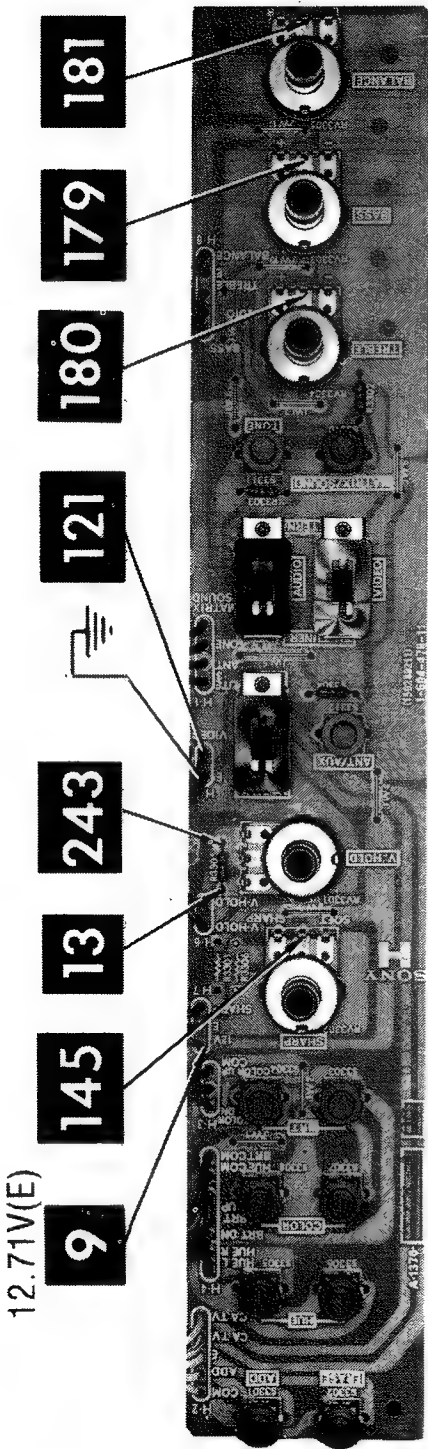


A BOARD GridTrace LOCATION GUIDE

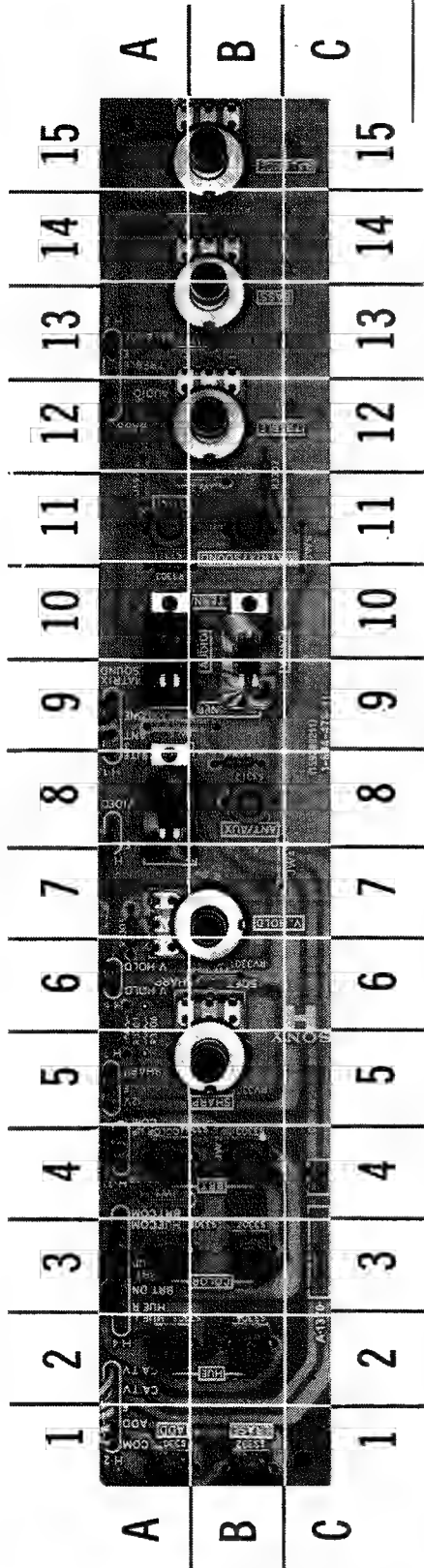
| | | | | | | | | | | | |
|------|------|-------|------|-------|------|------|------|-------|------|-------|------|
| A-6 | Q-12 | C415 | B-13 | D501 | D-25 | R251 | N-11 | R528 | F-19 | T202 | D-8 |
| A-7 | N-20 | C500 | F-21 | D502 | B-26 | R301 | B-10 | R529 | B-19 | T203 | E-4 |
| A-8 | N-25 | C501 | F-21 | D503 | Q-20 | R303 | G-10 | R530 | B-21 | T204 | F-7 |
| A-9 | Q-11 | C502 | E-21 | D504 | M-23 | R304 | C-14 | R531 | J-16 | T205 | F-5 |
| A-11 | N-12 | C503 | F-22 | D505 | S-27 | R305 | C-13 | R532 | K-16 | T206 | A-2 |
| A-12 | I-8 | C504 | F-23 | D506 | Q-14 | R306 | F-9 | R533 | N-13 | T302 | C-12 |
| A-14 | M-10 | C506 | D-22 | D508 | P-16 | R307 | C-18 | R534 | H-24 | T501 | G-26 |
| A-15 | F-14 | C507 | E-25 | D509 | P-16 | R309 | D-17 | R535 | F-26 | T502 | P-24 |
| A-16 | F-18 | C508 | H-19 | D510 | Q-13 | R310 | E-17 | R536 | R-11 | T503 | R-17 |
| A-17 | F-2 | C509 | I-19 | D512 | J-22 | R311 | E-17 | R537 | R-11 | TH201 | D-2 |
| A-19 | H-7 | C510 | G-19 | D513 | B-20 | R312 | F-13 | R538 | P-14 | TH801 | K-10 |
| A-21 | Q-15 | C511 | H-20 | D514 | G-22 | R313 | F-13 | R539 | R-21 | TP2 | B-7 |
| A-22 | J-15 | C512 | H-20 | D515 | D-20 | R314 | F-14 | R540 | S-19 | TP3 | D-15 |
| A-23 | B-19 | C513 | I-20 | D517 | B-21 | R316 | G-14 | R541 | N-19 | TP4 | D-21 |
| A-25 | P-9 | C514 | B-22 | DL301 | B-11 | R317 | H-15 | R542 | K-19 | TP5 | E-16 |
| A-26 | B-12 | C515 | B-21 | DY-1 | J-20 | R318 | G-15 | R543 | K-14 | TP6 | D-15 |
| A-27 | C-10 | C516 | B-20 | DY-2 | J-21 | R320 | B-16 | R544 | K-14 | TP8 | F-15 |
| A-28 | I-16 | C517 | D-20 | DY-3 | L-8 | R321 | C-17 | R545 | K-18 | TP9 | F-15 |
| A-29 | D-18 | C518 | E-20 | IC201 | B-6 | R323 | D-17 | R546 | K-14 | TP12 | A-10 |
| A-30 | R-21 | C519 | D-20 | IC301 | C-15 | R324 | B-17 | R547 | S-13 | TP92 | N-13 |
| C201 | B-5 | C520 | A-16 | IC302 | G-11 | R327 | A-15 | R548 | S-14 | TP93 | I-13 |
| C202 | B-7 | C521 | A-18 | IC501 | D-21 | R329 | H-14 | R549 | R-16 | TP95 | N-22 |
| C203 | B-8 | C522 | A-21 | IC502 | B-23 | R330 | G-13 | R550 | M-14 | TP96 | Q-13 |
| C204 | C-8 | C523 | B-23 | J201 | B-2 | R332 | G-17 | R551 | L-14 | X301 | E-19 |
| C205 | C-7 | C524 | A-23 | L201 | E-8 | R333 | H-16 | R552 | M-15 | | |
| C206 | G-8 | C525 | C-25 | L202 | B-8 | R334 | D-10 | R553 | F-15 | | |
| C207 | D-7 | C526 | B-25 | L203 | C-8 | R335 | E-9 | R554 | Q-15 | | |
| C208 | D-5 | C527 | F-25 | L204 | F-6 | R336 | B-14 | R555 | Q-19 | | |
| C209 | D-4 | C528 | F-26 | L301 | B-16 | R401 | G-9 | R556 | Q-15 | | |
| C210 | D-5 | C529 | E-26 | L302 | D-17 | R402 | F-10 | R557 | S-24 | | |
| C211 | D-5 | C530 | M-21 | L303 | F-13 | R403 | F-11 | R561 | R-15 | | |
| C212 | F-3 | C531 | M-21 | L304 | B-15 | R404 | I-14 | R562 | R-12 | | |
| C213 | C-5 | C532 | R-21 | L401 | I-11 | R405 | G-13 | R563 | A-16 | | |
| C214 | F-4 | C533 | N-23 | L501 | S-21 | R406 | F-12 | R565 | A-20 | | |
| C215 | E-7 | C534 | Q-21 | L502 | S-22 | R408 | E-11 | R566 | A-21 | | |
| C216 | E-3 | C535 | J-13 | L503 | N-24 | R409 | H-13 | R568 | F-24 | | |
| C219 | E-3 | C536 | K-18 | L504 | H-26 | R410 | H-11 | R570 | F-24 | | |
| C220 | B-4 | C537 | K-17 | L505 | L-16 | R411 | H-9 | R571 | I-18 | | |
| C221 | G-6 | C538 | L-13 | L506 | Q-17 | R412 | H-10 | R572 | R-11 | | |
| C223 | F-4 | C539 | S-15 | L507 | F-18 | R413 | H-11 | R573 | B-19 | | |
| C250 | H-17 | C540 | R-20 | L508 | Q-19 | R414 | I-9 | R574 | B-18 | | |
| C251 | N-11 | C541 | R-19 | Q250 | N-11 | R415 | H-13 | R576 | I-23 | | |
| C303 | Q-13 | C543 | L-14 | Q301 | C-17 | R416 | I-12 | R577 | P-14 | | |
| C304 | Q-13 | C544 | Q-21 | Q401 | I-12 | R417 | G-11 | R578 | Q-15 | | |
| C306 | Q-14 | C545 | S-22 | Q402 | B-13 | R418 | G-11 | R579 | A-15 | | |
| C307 | Q-14 | C546 | P-13 | Q501 | F-25 | R419 | A-11 | R580 | C-20 | | |
| C308 | D-13 | C547 | Q-13 | Q502 | K-24 | R420 | B-13 | R581 | C-20 | | |
| C309 | B-15 | C548 | H-25 | Q503 | K-14 | R430 | E-11 | R582 | F-19 | | |
| C311 | C-16 | C549 | E-21 | Q504 | R-14 | R501 | H-22 | R583 | F-26 | | |
| C313 | Q-17 | C550 | E-21 | Q505 | S-12 | R502 | G-23 | R585 | R-21 | | |
| C315 | B-14 | C551 | S-13 | Q506 | S-12 | R503 | F-22 | R586 | A-17 | | |
| C316 | Q-14 | C553 | A-19 | Q507 | E-19 | R504 | E-22 | R587 | Q-18 | | |
| C317 | E-14 | C554 | F-20 | Q801 | Q-10 | R505 | E-23 | R589 | D-18 | | |
| C318 | F-13 | C555 | F-20 | R200 | C-3 | R506 | D-22 | R590 | F-24 | | |
| C319 | F-14 | C556 | F-20 | R201 | B-5 | R507 | D-24 | R599 | B-20 | | |
| C320 | G-13 | C558 | D-22 | R202 | A-7 | R508 | F-25 | R801 | Q-12 | | |
| C324 | E-14 | C559 | F-21 | R203 | B-8 | R509 | C-22 | R802 | P-11 | | |
| C326 | F-18 | C561 | S-12 | R204 | B-8 | R510 | G-19 | R803 | Q-10 | | |
| C327 | B-16 | C562 | A-17 | R206 | Q-7 | R511 | H-18 | R804 | P-12 | | |
| C328 | D-14 | C563 | B-22 | R207 | C-8 | R512 | J-16 | R805 | Q-10 | | |
| C330 | H-15 | C565 | A-17 | R209 | F-8 | R513 | G-20 | R806 | N-10 | | |
| C401 | H-9 | C566 | L-22 | R213 | C-3 | R514 | G-20 | R807 | F-9 | | |
| C402 | E-10 | C568 | E-22 | R214 | C-3 | R515 | H-19 | RV201 | Q-2 | | |
| C403 | E-10 | C569 | A-23 | R215 | B-4 | R516 | H-20 | RV202 | F-2 | | |
| C404 | H-12 | C570 | E-24 | R216 | C-4 | R517 | H-19 | RV301 | F-10 | | |
| C405 | I-13 | C571 | H-18 | R218 | F-3 | R518 | I-20 | RV302 | Q-17 | | |
| C406 | H-13 | C801 | Q-9 | R219 | E-3 | R519 | A-21 | RV303 | F-17 | | |
| C407 | E-12 | C802 | Q-9 | R220 | D-5 | R520 | A-22 | RV304 | F-17 | | |
| C408 | D-12 | CF201 | B-8 | R222 | D-3 | R521 | B-20 | RV501 | G-23 | | |
| C409 | I-10 | CF202 | F-8 | R225 | H-6 | R522 | E-20 | RV502 | I-17 | | |
| C411 | H-12 | CV301 | E-13 | R226 | D-8 | R523 | B-22 | RV503 | K-15 | | |
| C413 | H-11 | D201 | F-1 | R227 | Q-2 | R524 | E-19 | RV504 | K-19 | | |
| C414 | E-11 | D202 | D-1 | R228 | G-4 | R525 | D-19 | CF201 | B-3 | | |
| | | D250 | N-11 | R230 | G-3 | R526 | F-19 | SG501 | Q-19 | | |
| | | D301 | B-15 | R250 | N-12 | R527 | J-11 | T201 | B-5 | | |

A BOARD

SONY MODEL
KV-2649R (CH SCC-338E-A)



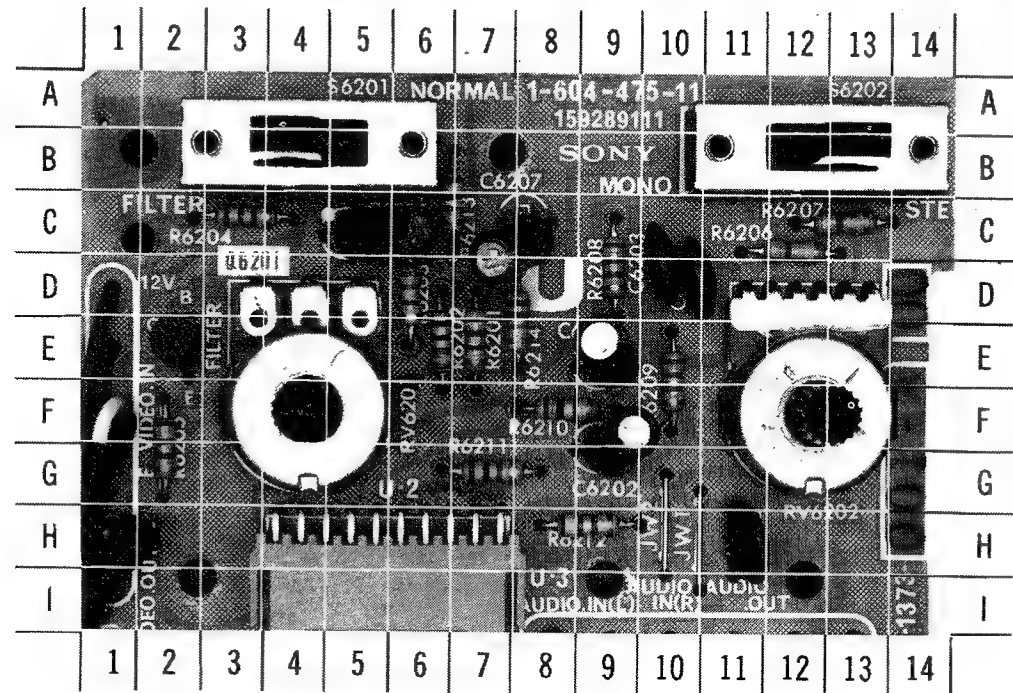
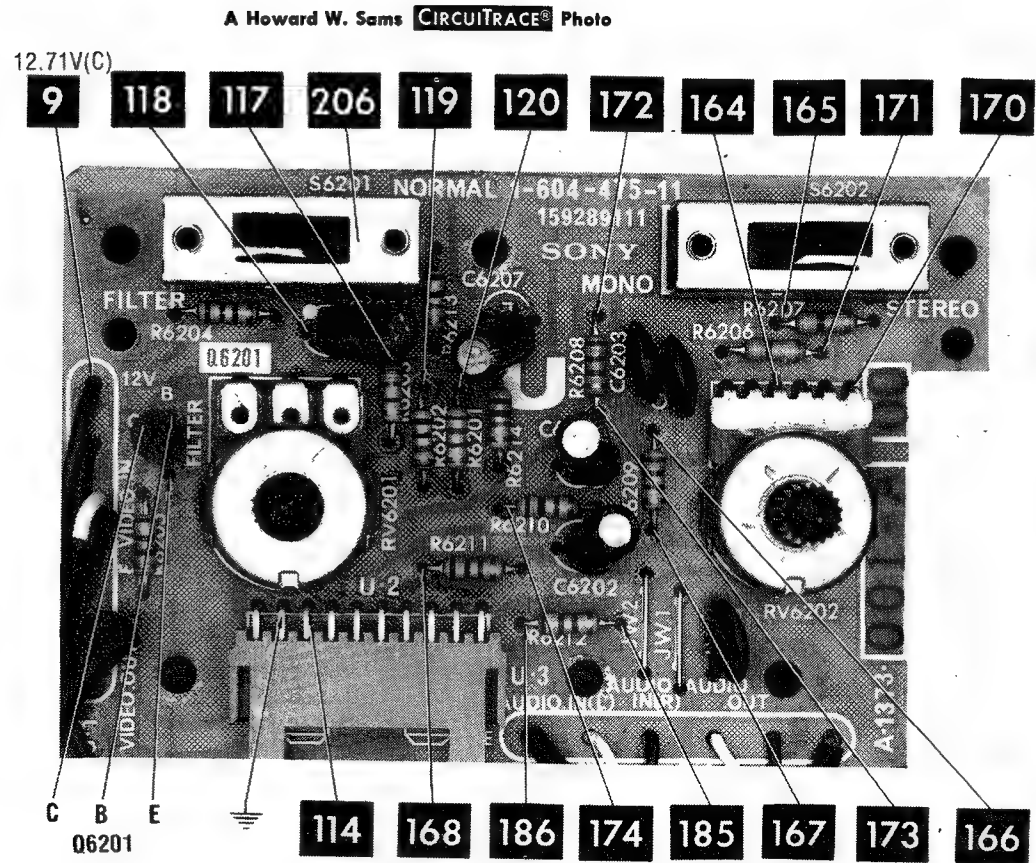
H BOARD A Howard W. Sams CIRCUITRACE® Photo



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H BOARD GridTrace LOCATION GUIDE

| | |
|--------|------|
| R3305 | A-7 |
| RV3301 | B-7 |
| RV3302 | B-5 |
| RV3303 | B-13 |
| RV3304 | B-12 |
| RV3305 | B-15 |
| S3309 | B-9 |
| S3313 | A-10 |

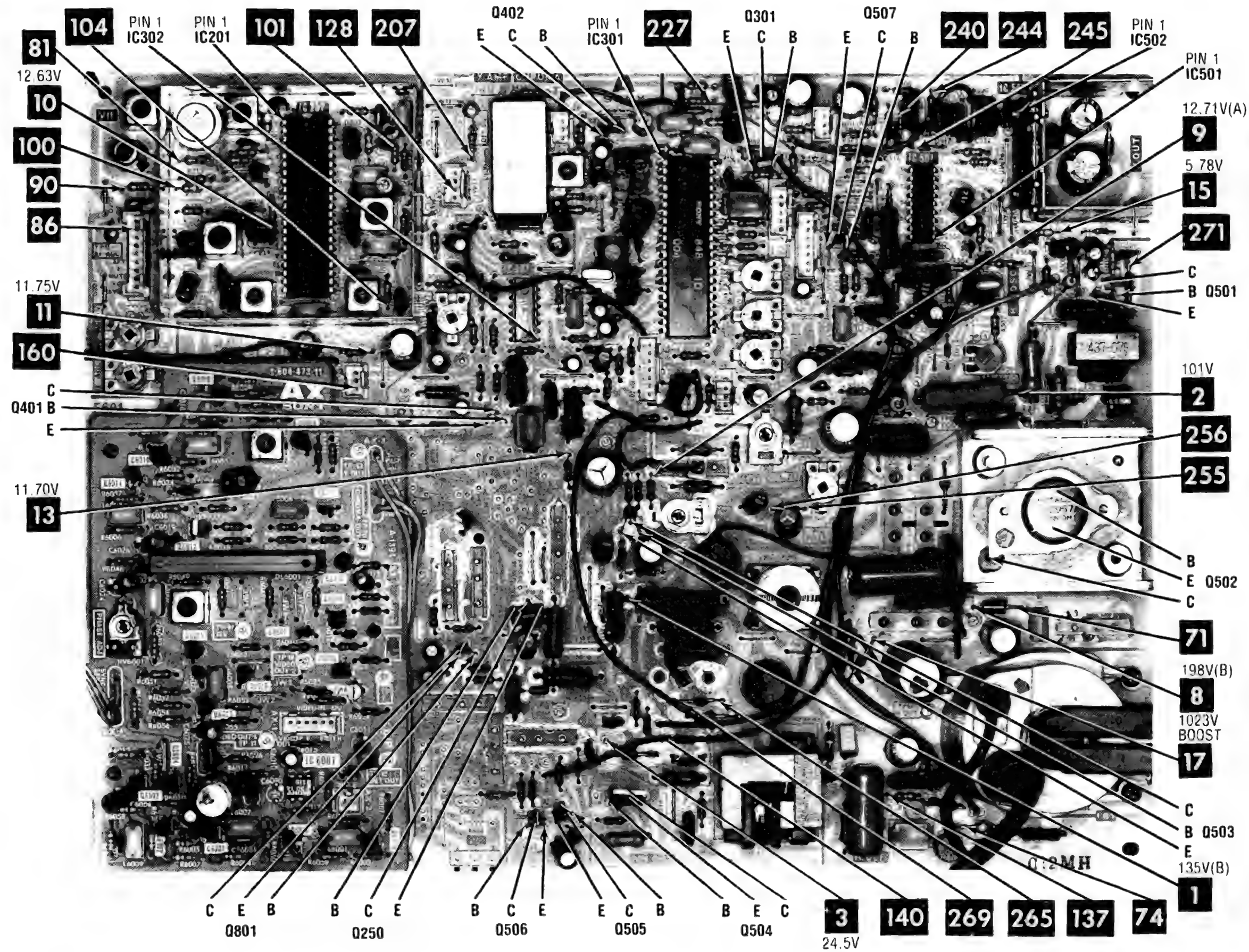


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U BOARD

U BOARD GridTrace LOCATION GUIDE

| | | | | | | | | | |
|-------|------|-------|-----|-------|------|---------|------|---------|------|
| C6201 | E-9 | C6207 | C-7 | R6205 | G-2 | R6211 | G-7 | RV6202B | F-12 |
| C6202 | F-9 | Q6201 | E-2 | R6206 | C-12 | R6212 | H-9 | S6201 | B-4 |
| C6203 | D-10 | R6201 | E-7 | R6207 | C-13 | R6213 | C-6 | S6202 | B-12 |
| C6204 | D-10 | R6202 | E-6 | R6208 | D-9 | R6214 | E-8 | U-2 | H-7 |
| C6205 | H-11 | R6203 | D-6 | R6209 | E-10 | RV6291 | F-4 | | |
| C6206 | C-5 | R6204 | C-3 | R6210 | F-8 | RV6202A | F-12 | | |



SEMICONDUCTORS (Select replacement transistor for best results) (cont)

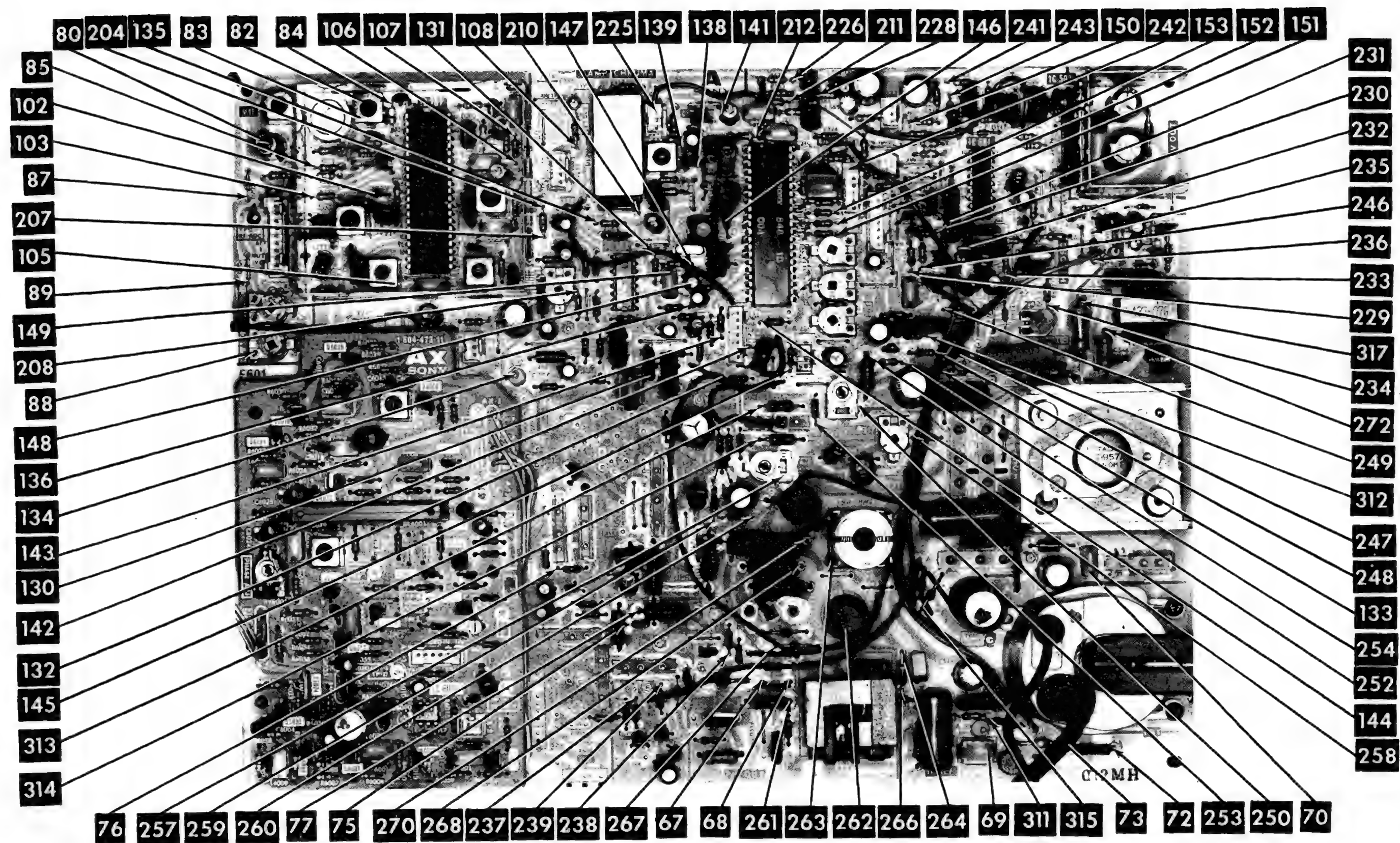
| ITEM No. | TYPE No. | MFR. PART No. | REPLACEMENT DATA | | | | | | ZENITH PART No. | MOTOROLA PART No. |
|-----------|------------|---------------|---------------------------|--------------|--------------|--------------|---------------------|------------------|-----------------|-------------------|
| | | | GENERAL ELECTRIC PART No. | TCG PART No. | RCA PART No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | | |
| D602 | U05G | 8-719-911-55 | GE-512 | TCG156 | SK3051/156 | ECG156 | TM156 | WEP4008/156 | 212-Z9000 | IN4725 |
| D603 | U05E | 8-719-102-89 | GE-512 | TCG156 | SK3051/156 | ECG156 | TM156 | WEP4008/156 | 212-Z9000 | IN4725 |
| D604 | SI801-02 | 8-719-305-15 | GE-504A | TCG116 | SK3311 | ECG116 | TM116 | WEP156 | 212-76-02 | IN52408 |
| Thru D606 | 10E2 | 8-719-200-01 | GE-504A | TCG116 | SK3311 | ECG116 | TM116 | WEP156 | 212-76-02 | IN4003 |
| D607 | V09E | 8-719-900-95 | GE-511 | TCG552 | SK9000/552 | ECG552 | TM552 | WEP152/552 | 103-287 | MR1-1400 |
| D608 | V09G | 8-719-305-15 | GE-511 | TCG552 | SK9000/552 | ECG552 | TM552 | WEP152/552 | 103-287 | MR1-1400 |
| D609 | EQ801-24RR | 8-719-124-08 | GEZD-24 | TCG5081A | SK3151/5081A | ECG5081A | TM5081A | WEP164/5081 | 103-Z9000 | IN4749A |
| D610 | RD24F-BS | 8-719-305-15 | GE-511 | TCG552 | SK9000/552 | ECG552 | TM552 | WEP164/5081 | 103-Z9000 | IN4749A |
| D611 | V19E | 8-719-305-15 | GE-530 | TCG551 | SK3925/525 | ECG551 | TM551 | WEP177/525 | 103-287 | MR1-1400 |
| D612 | GH-3F | 8-719-305-15 | GE-511 | TCG552 | SK9000/552 | ECG552 | TM552 | WEP177/525 | 103-Z9010 | MR1-1400 |
| Thru D615 | V19C | 8-719-103-06 | GE-530 | TCG551 | SK9000/552 | ECG551 | TM551 | WEP177/525 | 103-Z9010 | MR1-1400 |
| D616 | GH-3F | 8-719-200-02 | GE-504A | TCG116 | SK3311 | ECG116 | TM116 | WEP156 | 212-76-02 | IN4003 |
| D618 | 10E2 | 8-719-900-93 | GE-504A | TCG116 | SK3311 | ECG116 | TM116 | WEP156 | 212-76-02 | IN4003 |
| D650 | RM1Z | 8-719-103-06 | GE-504A | TCG116 | SK3312 | ECG116 | TM116 | WEP156 | 212-76-02 | IN4003 |
| Thru D654 | V06C | 8-719-911-19 | GE-511 | TCG552 | SK9000/552 | ECG552 | TM552 | WEP157 | 103-287 | MR1-1400 |
| D655 | V09C | 8-719-911-19 | GE-511 | TCG552 | SK9000/552 | ECG552 | TM552 | WEP152/552 | 103-287 | MR1-1400 |
| D701 | RD13E-B3Z | 8-719-103-06 | GEZD-13 | TCG5022A | SK3788/5022A | ECG5022A | TM5022A | WEP1424/5022 | 103-96 | IN52438 |
| Thru D703 | RD13EN2 | 8-719-911-19 | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP1424/5022 | 103-96 | IN52438 |
| | IS1555 | | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP925/519 | 103-131 | IN4935 |
| | | | | | | | | WEP1062/177 | 103-131 | IN4935 |

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)
Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

| ITEM No. | TYPE No. | MFR. PART No. | REPLACEMENT DATA | | | | | | ZENITH PART No. | MOTOROLA PART No. |
|----------|-----------|---------------|---------------------------|--------------|--------------|--------------|---------------------|------------------|-----------------|-------------------|
| | | | GENERAL ELECTRIC PART No. | TCG PART No. | RCA PART No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | | |
| D704 | RD33E-B2 | 8-719-101-04 | GEZD-33 | TCG5036A | SK3802/5036A | ECG5036A | TM5036A | WEP1438/5036 | 103-Z9004 | IN5257B |
| D705 | RD33E-B2Z | 8-719-911-19 | GEZD-33 | TCG5036A | SK3802/5036A | ECG5036A | TM5036A | WEP1438/5036 | 103-Z9004 | IN5257B |
| D706 | 1S119 | 8-719-911-19 | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | IN4935 |
| | 1S1555 | 8-719-911-19 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | IN4935 |
| | 1S1555 | 8-719-911-19 | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | IN4935 |
| | 1S1555 | 8-719-911-19 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | IN4935 |
| IC201 | CX-885 | 8-758-850-00 | | | | | | | | |
| IC301 | CX-848 | 8-758-480-00 | | | | | | | | |
| IC302 | CX-841 | 8-759-908-41 | | | | | | | | |
| IC501 | LA7802 | 8-759-878-03 | | | | | | | | |
| IC502 | UPC1368H2 | 8-759-103-68 | | | | | | | | |
| IC601 | DM-7 | 1-235-058-00 | | | | | | | | |
| IC5001 | CX-875A | 8-759-918-75 | | | | | | | | |
| IC5002 | CX-874 | 8-758-740-00 | | | | | | | | |
| IC5003 | CX-766 | 8-757-660-00 | | | | | | | | |
| IC5004 | UPC1188H | 8-759-111-88 | | | | | | | | |
| IC5005 | UPC1188H | 8-759-111-88 | | | | | | | | |
| IC6001 | CX-130 | 8-751-300-00 | | | | | | | | |
| Q1 | 2SA1048Y | 8-729-117-54 | GE-269 | TCG290A | SK3114/290 | ECG290A | TM290 | WEP911/290 | 905-124 | 2N4403* |
| Q250 | 2SA1175 | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1313 | 2N5401* |
| | 2SC1419C | 8-729-316-16 | GE-66A | TCG152 | SK3197/235 | ECG152 | TM152 | WEP745/152 | 921-1311 | 2N5401* |
| | 2SC1061 | 8-729-316-16 | GE-66A | TCG152 | SK3893/152 | ECG152 | TM152 | WEP745/152 | 121-987-03 | T1P41A |
| Q301 | 2SC945K | 8-729-178-54 | GE-212 | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-987-03 | T1P41A |
| Q401 | 2SC2785 | 8-729-117-54 | GE-89+ | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 121-972* | MPSA18* |
| Q402 | 2SA733 | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1325 | 2N4401* |
| | 2SC945K | 8-729-178-54 | GE-48 | TCG290A | SK3114/290 | ECG290A | TM290 | WEP62/159* | 921-1311 | 2N5401* |
| | 2SC1364 | 8-729-178-54 | GE-210 | TCG289A | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-987-03 | MPSA18* |
| | 2SC2785 | 8-729-178-54 | GE-89+ | TCG85 | SK9229/85 | ECG85 | TM289 | WEP634 | 121-972* | MPSA05* |
| Q501 | 2SC2230AY | 8-729-213-11 | GE-222* | TCG399 | SK3866 | ECG399 | TM287* | WEP910/289 | 121-972* | 2N4401* |
| Q502 | 2SD957A | 8-729-395-70 | GE-82* | TCG89 | SK9119/89 | ECG89 | TM159* | WEP68/287* | 921-1325 | MPSA42* |
| Q503 | 2SA1175E | 8-729-117-54 | GE-48 | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N54601* |
| | 2SA733 | | | TCG290A | SK3114/290 | ECG290A | TM290 | WEP62/159* | 121-987-03 | 2N4403* |



Ref.No Part No Description

MH

| | | |
|---------------------------------|--------------|----------------------------------|
| A-1306-127-A MH BOARD, COMPLETE | | |
| CP001 | 1-231-683-00 | COMPOSITION CIRCUIT BLOCK 22KX5 |
| CP002 | 1-231-683-00 | COMPOSITION CIRCUIT BLOCK 22KX5 |
| CP003 | 1-231-570-00 | COMPOSITION CIRCUIT BLOCK 220KX7 |
| CP004 | 1-231-425-00 | CAPACITOR BLOCK 220PX6 |
| CP005 | 1-231-569-00 | COMPOSITION CIRCUIT BLOCK 22KX4 |
| CP006 | 1-231-682-00 | COMPOSITION CIRCUIT BLOCK 220PX4 |
| IC001 | 8-759-153-86 | IC UPD553C086 |
| IC002 | 8-757-611-00 | IC CX-761A |
| IC003 | 8-759-291-26 | IC TC9125BP |
| IC004 | 8-759-133-90 | IC UPC339C |
| IC005 | 8-759-240-01 | IC TC4001BP |
| L001 | 1-407-179-00 | MICRO INDUCTOR 1.2UH |
| L002 | 1-407-179-00 | MICRO INDUCTOR 1.2UH |
| L003 | 1-407-179-00 | MICRO INDUCTOR 1.2UH |
| L004 | 1-407-169-XX | MICRO INDUCTOR 100UH |
| L005 | 1-420-945-00 | COIL, AIR-CORE 70MMH |
| L006 | 1-407-179-00 | MICRO INDUCTOR 1.2UH |
| L008 | 1-407-364-00 | COIL, SPOOK CHOKE 3.3UH |
| X001 | 1-527-590-00 | VIBRATOR, CRYSTAL |
| X002 | 1-527-532-00 | OSCILLATOR, CERAMIC |

MJ

| | | |
|-------------------------|--------------|--------------|
| A-1-604-477-00 MJ BOARD | | |
| S3201 | 1-553-685-00 | SWITCH, PUSH |
| S3202 | 1-553-685-00 | SWITCH, PUSH |
| S3203 | 1-553-685-00 | SWITCH, PUSH |
| S3204 | 1-553-685-00 | SWITCH, PUSH |
| S3205 | 1-553-685-00 | SWITCH, PUSH |
| S3206 | 1-553-685-00 | SWITCH, PUSH |
| S3207 | 1-553-685-00 | SWITCH, PUSH |
| S3208 | 1-553-685-00 | SWITCH, PUSH |

MK

| | | |
|-------------------------|--------------|---------------|
| A-1-604-478-00 MK BOARD | | |
| D3001 | 8-719-909-19 | DIODE GL-9NG9 |
| D3002 | 8-719-909-19 | DIODE GL-9NG9 |
| D3003 | 8-719-909-19 | DIODE GL-9NG9 |

Mz

| | | |
|---------------------------------|--------------|----------------------------------|
| A-1306-126-A MZ BOARD, COMPLETE | | |
| CP4001 | 1-231-682-00 | COMPOSITION CIRCUIT BLOCK 220PX4 |
| CP4002 | 1-231-619-00 | COMPOSITION CIRCUIT BLOCK 22KX4 |
| CP4003 | 1-231-683-00 | COMPOSITION CIRCUIT BLOCK 22KX5 |
| CP4004 | 1-231-682-00 | COMPOSITION CIRCUIT BLOCK 220PX4 |
| CP4005 | 1-231-659-00 | COMPOSITION CIRCUIT BLOCK 20KX7 |
| CP4006 | 1-231-569-00 | COMPOSITION CIRCUIT BLOCK 22KX4 |
| IC4001 | 8-759-147-66 | IC UPD547C066 |
| IC4002 | 8-759-245-14 | IC TC4514BP |
| IC4003 | 8-759-937-02 | IC TMS3701JNS |
| IC4004 | 8-759-937-01 | IC TMS3701BNS |
| IC4005 | 8-759-240-11 | IC TC4011BP |
| IC4006 | 8-759-240-11 | IC TC4011BP |
| IC4007 | 8-759-140-81 | IC UPD4081C |
| IC4008 | 8-759-240-11 | IC TC4011BP |
| IC4009 | 8-759-240-72 | IC TC4072BP |
| IC4010 | 8-759-240-13 | IC TC4013BP |
| IC4011 | 8-759-240-13 | IC TC4013BP |
| IC4012 | 8-759-240-69 | IC TC4069BP |
| IC4013 | 8-759-240-01 | IC TC4001BP |
| IC4014 | 8-759-240-01 | IC TC4001BP |
| IC4015 | 8-759-240-40 | IC TC4040BP |
| IC4016 | 8-759-240-11 | IC TC4011BP |
| IC4017 | 8-759-140-81 | IC UPD4081C |
| L4001 | 1-407-687-00 | MICRO INDUCTOR 3.3UH |
| RV4001 | 1-226-852-00 | RES, ADJ, CARBON 22K |
| RV4002 | 1-226-852-00 | RES, ADJ, CARBON 22K |
| RV4003 | 1-226-819-00 | RES, ADJ, CARBON 1K |
| RV4004 | 1-226-819-00 | RES, ADJ, CARBON 1K |
| RV4005 | 1-226-851-00 | RES, ADJ, CARBON 10K |
| RV4006 | 1-226-853-00 | RES, ADJ, CARBON 47K |

Remark Ref.No Part No Description

| | | |
|--------|--------------|---------------------|
| TH4001 | 1-800-944-00 | THERMISTOR TH-4700 |
| X4001 | 1-527-532-00 | OSCILLATOR, CERAMIC |

N

| | | |
|----------------------|--------------|---------------------------|
| 1-603-976-00 N BOARD | | |
| D1 | 8-719-110-32 | DIODE PH302B |
| IB1 | 1-232-004-00 | COMPOSITION CIRCUIT BLOCK |
| IC1 | 8-759-113-73 | IC UPC1373H |
| L1 | 1-404-310-00 | COIL |

S

| | | |
|------------------------|--------------|-----------------------|
| A-1-604-506-00 S BOARD | | |
| C1001 | 1-123-330-00 | ELECT 22MF 20% 25V |
| C1002 | 1-123-329-00 | ELECT 10MF 20% 25V |
| C1003 | 1-123-329-00 | ELECT 10MF 20% 25V |
| C1004 | 1-123-329-00 | ELECT 10MF 20% 25V |
| C1005 | 1-108-389-00 | MYLAR 0.1MF 10% 100V |
| C1006 | 1-108-377-00 | MYLAR 0.01MF 10% 100V |
| R1001 | 1-246-461-00 | CARBON 330 5% 1/4W |

SA

| | | |
|-------------------------|--------------|-------------------------|
| A-1-604-479-00 SA BOARD | | |
| C1007 | 1-123-318-00 | ELECT 33MF 20% 16V |
| C1008 | 1-101-004-00 | CERAMIC 0.01MF 50V |
| L1001 | 1-407-364-00 | COIL, SPOOK CHOKE 3.3UH |

TA

| | | |
|-------------------------|--------------|---------------------------------|
| A-1-604-480-00 TA BOARD | | |
| C3101 | 1-102-820-00 | CERAMIC 330PF 5% 50V |
| C3102 | 1-102-820-00 | CERAMIC 330PF 5% 50V |
| C3103 | 1-102-820-00 | CERAMIC 330PF 5% 50V |
| L3101 | 1-407-161-XX | MICRO INDUCTOR 22UH |
| ND3101 | 1-519-173-00 | INDICATOR TUBE (GREEN) FIP 2A13 |

Items marked "A" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

A: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)
Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

SEMICONDUCTORS (Select replacement transistor for best results)

| ITEM No. | TYPE No. | MFR. PART No. | REPLACEMENT DATA | | | | | | ZENITH PART No. | MOTOROLA PART No. |
|----------|-------------|---------------|---------------------------|--------------|--------------|--------------|---------------------|------------------|-----------------|-------------------|
| | | | GENERAL ELECTRIC PART No. | TCG PART No. | RCA PART No. | EGG PART No. | THORDARSON PART No. | WORKMAN PART No. | | |
| D201 | 1S119 | 8-719-911-19 | GE-514 | TCG519 | SK3100/519 | EGG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D202 | 1S155 | 8-719-911-19 | GE-300 | TCG177 | SK9091/177 | EGG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D250 | 1S155 | 8-719-103-06 | GE-300 | TCG519 | SK3100/519 | EGG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| | RD13EN2 | | GEZD-13 | TCG177 | SK9091/177 | EGG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| | RD13E-BZZ | | GEZD-13 | TCG5022A | SK3788/5022A | EGG5022A | TM5022A | WEP1424/5022 | 103-96 | 1N5243B |
| | | | | TCG5022A | SK3788/5022A | EGG5022A | TM5022A | WEP1424/5022 | 103-96 | 1N5243B |
| D301 | 1S119 | 8-719-911-19 | GE-514 | TCG519 | SK3100/519 | EGG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| | 1S155 | | GE-300 | TCG177 | SK9091/177 | EGG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D501 | RD5.6E-BZZ | 8-719-156-25 | GEZD-5.6 | TCG5011A | SK3777/5011A | EGG5011A | TM5011A | WEP1412/5011 | 103-Z9007 | 1N5232B |
| D502 | RD5.6E-BZ7S | | GEZD-5.6 | TCG5011A | SK3777/5011A | EGG5011A | TM5011A | WEP1412/5011 | 103-Z9007 | 1N5232B |
| | GP08D | | GE-504A | TCG116 | SK3511 | EGG116 | TM116 | WEP156 | 212-76-02 | 1N4003 |
| | U05G | 8-719-911-55 | GE-512 | TCG156 | SK3051/156 | EGG156 | TM156 | WEP4008/156 | 212-Z9000 | 1N4725 |
| D503 | V11N | 8-719-901-19 | GE-533 | TCG525 | SK3925/525 | EGG525 | TM525 | WEP177/525 | 212-Z9010 | 1N4935 |
| D504 | RH1A | 8-719-300-76 | GE-511 | TCG552 | SK9000/552 | EGG552 | TM552 | WEP152/552 | 103-287 | MR1-1400 |
| D505 | GH-3F | 8-719-305-15 | GE-530 | TCG551 | SK3925/525 | EGG551 | TM551 | WEP177/525 | 103-Z9010 | 1N4005 |
| D506 | GU-3A | 8-719-300-38 | GE-504A | TCG116 | SK3313/116 | EGG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| | GU-3A | | GE-504A | TCG116 | SK3513/116 | EGG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| D508 | V19C | 8-719-305-15 | GE-511 | TCG552 | SK9000/552 | EGG552 | TM552 | WEP152/552 | 103-287 | MR1-1400 |
| D509 | V09C | 8-719-900-93 | GE-530 | TCG551 | SK3925/525 | EGG551 | TM551 | WEP177/525 | 103-Z9010 | 1N4005 |
| | V06C | | GE-504A | TCG116 | SK3312 | EGG116 | TM116 | WEP157 | 212-76-02 | 1N4005 |
| D510 | RD24E-BZ7 | 8-719-190-00 | GEZD-24 | TCG5031A | SK3797/5031A | EGG5031A | TM5031A | WEP1433/5031 | 103-212 | MR1-1400 |
| D512 | V30N | 8-719-903-09 | GE-511 | TCG506 | SK3998/506 | EGG506 | TM506 | WEP172/506 | 103-287 | MR1-1400 |
| D513 | 1S119 | 8-719-911-19 | GE-514 | TCG519 | SK3100/519 | EGG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| | 1S155 | | GE-300 | TCG177 | SK9091/177 | EGG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D514 | RD13EN3 | 8-719-103-11 | GEZD-15 | TCG5024A | SK3790/5024A | EGG5024A | TM5024A | WEP1426/5024 | 103-Z9013 | 1N5245B |
| | RD13E-BZZ | | GEZD-15 | TCG5024A | SK3790/5024A | EGG5024A | TM5024A | WEP1426/5024 | 103-Z9013 | 1N5245B |
| D515 | 1S119 | 8-719-911-19 | GE-514 | TCG519 | SK3100/519 | EGG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| | 1S155 | | GE-300 | TCG177 | SK9091/177 | EGG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D517 | 1S119 | 8-719-911-19 | GE-514 | TCG519 | SK3100/519 | EGG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| | 1S155 | | GE-300 | TCG177 | SK9091/177 | EGG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D601 | U05G | 8-719-911-55 | GE-512 | TCG156 | SK3051/156 | EGG156 | TM156 | WEP4008/156 | 212-Z9000 | 1N4725 |
| | U05E | | GE-512 | TCG156 | SK3051/156 | EGG156 | TM156 | WEP4008/156 | 212-Z9000 | 1N4725 |

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)
Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | MFR. PART No. | REPLACEMENT DATA | | NOTES |
|-------------|-------------|------------------|------------------|--------------|-------|
| | | | SPRAGUE PART No. | | |
| | | | Q-LINE | GENERAL LINE | |
| C1 | 10 16V 20% | 1-123-316-00 | QCP-4148-01 | TVAN-1304.1 | |
| C203 | .1 50V 20% | 1-123-586-00 | | | |
| C204 | .22 50V 20% | 1-123-447-00 | | | |
| C206 | 470 16V 20% | 1-123-323-00 | | | |
| C212 | 1 50V 20% | 1-123-380-00 | | | |
| C214 | 10 16V 20% | 1-123-356-00 | | | |
| C216 | 1 50V 20% | 1-123-380-00 | | | |
| C221 | 47 16V 20% | 1-123-332-00 | | | |
| C250 | 47 16V 20% | 1-123-332-00 | | | |
| C251 | 47 16V 20% | 1-123-332-00 | | | |
| C306 | .22 50V 20% | 1-123-447-00 | | | |
| C315 | .33 50V 20% | 1-123-286-00 | | | |
| C316 | .22 50V 20% | 1-123-447-00 | | | |
| C318 | .47 50V 20% | 1-123-379-00 | | | |
| C319 | 10 16V NP | 1-121-806-00 | | | |
| C320 | .47 50V 20% | 1-123-379-00 | | | |
| C326 | 33 16V 20% | 1-123-318-00 | | | |
| C327 | 47 16V 20% | 1-123-332-00 | | | |
| C328 | 100 16V 20% | 1-123-333-00 | | | |
| C330 | 1 50V 20% | 1-123-352-00 | | | |
| C401 | 1 50V 20% | 1-123-380-00 | | | |
| C402 | 33 16V 20% | 1-123-318-00 | | | |
| C403 | 1 50V 20% | 1-123-380-00 | | | |
| C404 | 10 50V 20% | 1-123-356-00 | | | |
| C406 | 2.2 50V 20% | 1-123-381-00 | | | |
| C407 | 10 16V 20% | 1-123-356-00 | | | |
| C408 | 1 50V 20% | 1-123-380-00 | | | |
| C409 | 1 50V 20% | 1-123-380-00 | | | |
| C415 | 22 16V 20% | 1-123-330-00 | | | |
| C500 | 1 50V 20% | 1-123-380-00 | | | |
| C501 | 22 25V 20% | 1-123-330-00 | | | |
| C506 | 10 25V 20% | 1-123-329-00 | | | |
| C507 | .47 50V 20% | 1-123-379-00 | | | |
| C508 | 1 25V 10% | 1-131-236-00 | | | |
| C509 | 560 25V 10% | 1-123-587-00 | | | |
| C511 | 2.2 20V 10% | 1-131-196-00 | | | |
| C512 | .33 50V 20% | 1-123-286-00 | | | |
| C516 | 2.2 20V 10% | 1-131-196-00 | | | |
| C517 | 1 50V 20% | 1-123-380-00 | | | |
| C520 | 1 50V 20% | 1-123-380-00 | | | |
| C521 | 470 16V 20% | 1-123-323-00 | | | |
| C525 | 330 50V 20% | 1-123-362-00 | | | |
| C526 | 100 50V 20% | 1-123-360-00 | | | |
| C533 | 10 160V | 1-121-999-00 | | | |
| C534 | 33 160V | 1-121-757-00 | | | |
| C535 | 330 50V 20% | 1-123-362-00 | | | |
| C536 | 33 50V 20% | 1-123-358-00 | | | |
| C537 | 10 50V 20% | 1-123-356-00 | | | |
| C538 | 22 50V 20% | 1-123-357-00 | | | |
| C543 | 4.7 250V | 1-121-759-00 | | | |
| C544 | 330 25V 20% | 1-123-335-00 | | | |
| C551 | 4.7 35V 20% | 1-131-351-00 | | | |
| C553 | 220 16V 20% | 1-123-321-00 | | | |
| C558 | 10 16V 20% | 1-123-356-00 | | | |
| C559 | 1 50V 20% | 1-123-380-00 | | | |
| C561 | 22 50V 20% | 1-123-357-00 | | | |
| C562 | 4.7 25V 20% | 1-123-328-00 | | | |
| C565 | .1 50V 20% | 1-123-586-00 | | | |
| C570 | 10 50V 20% | 1-123-356-00 | | | |
| C571 | 100 16V 20% | 1-123-333-00 | | | |
| # C605 | 470 200V | 1-125-260-00 | | | |
| # C606 | 470 200V | 1-125-260-00 | | | |
| C610 | 1 160V | 1-123-252-00 | | | |
| C616 | 47 50V 20% | 1-123-359-00 | | | |
| C617 | 100 50V 20% | 1-123-360-00 | | | |
| C622 | 470 25V 20% | 1-123-336-00 | | | |
| C623 | 4700 35V | 1-125-193-00 | | | |
| | | | | TVA-1504* | |
| | | | | SD35-4R79 | |
| | | | | TVA-1540* | |
| | | | | TVA-1318.7 | |

PARTS LIST AND DESCRIPTION (CONTINUED)

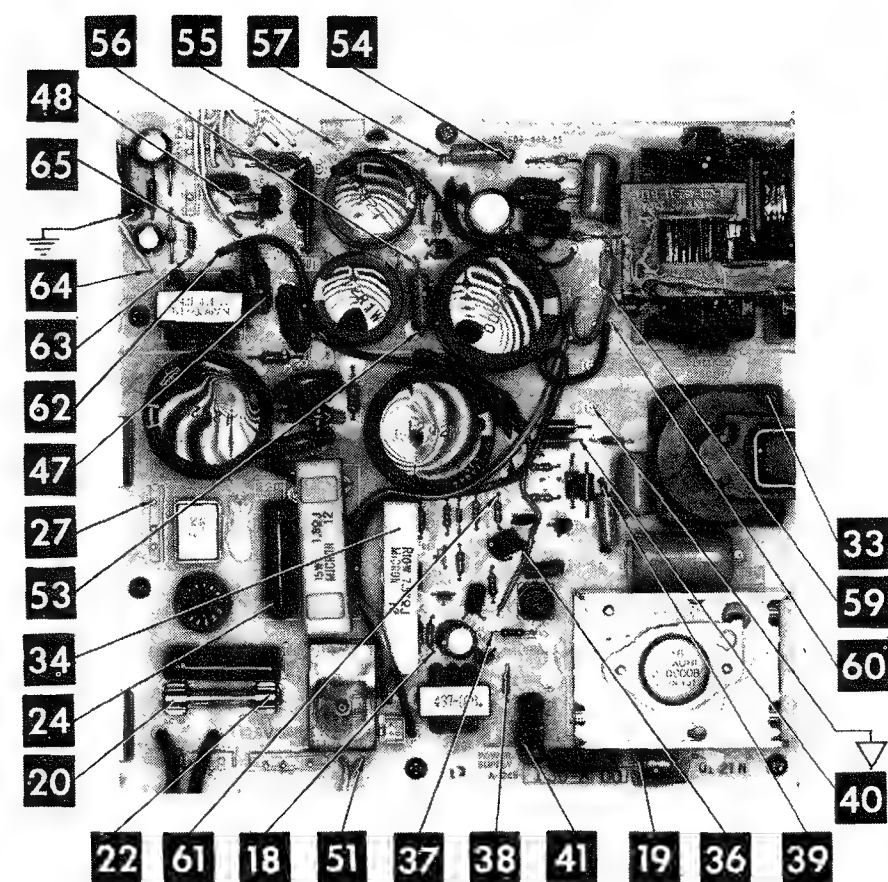
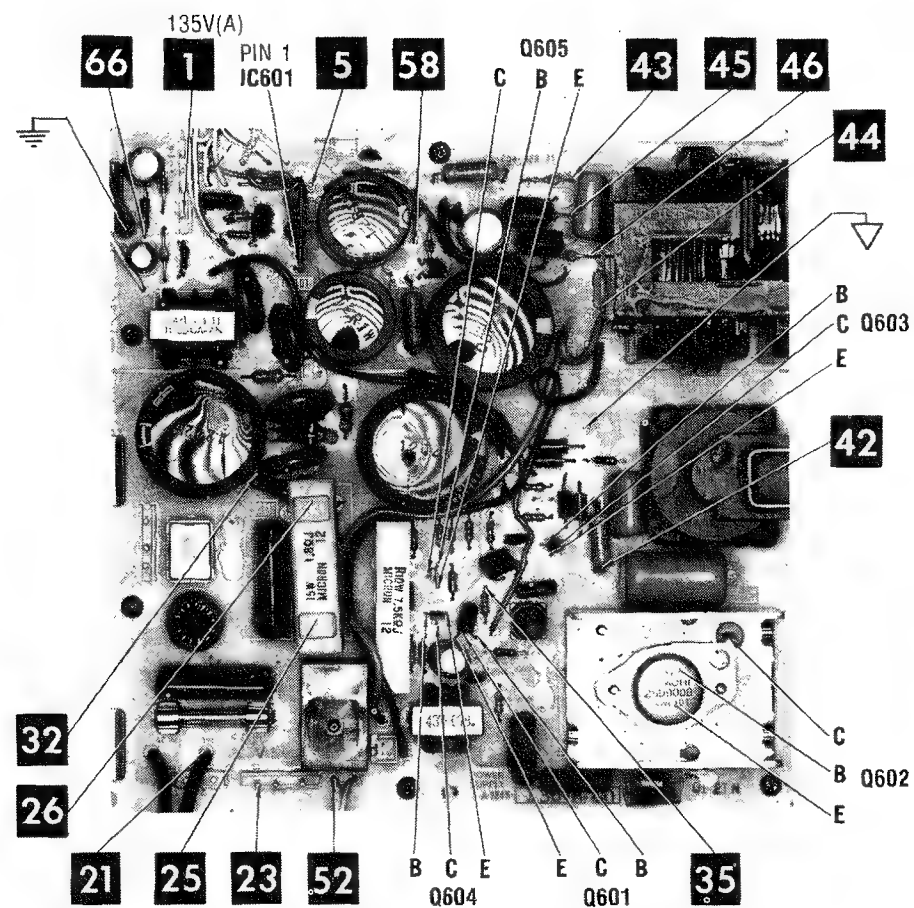
(When ordering parts, state Model, Part Number, and Description.)
Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

ELECTROLYTIC CAPACITORS (cont)

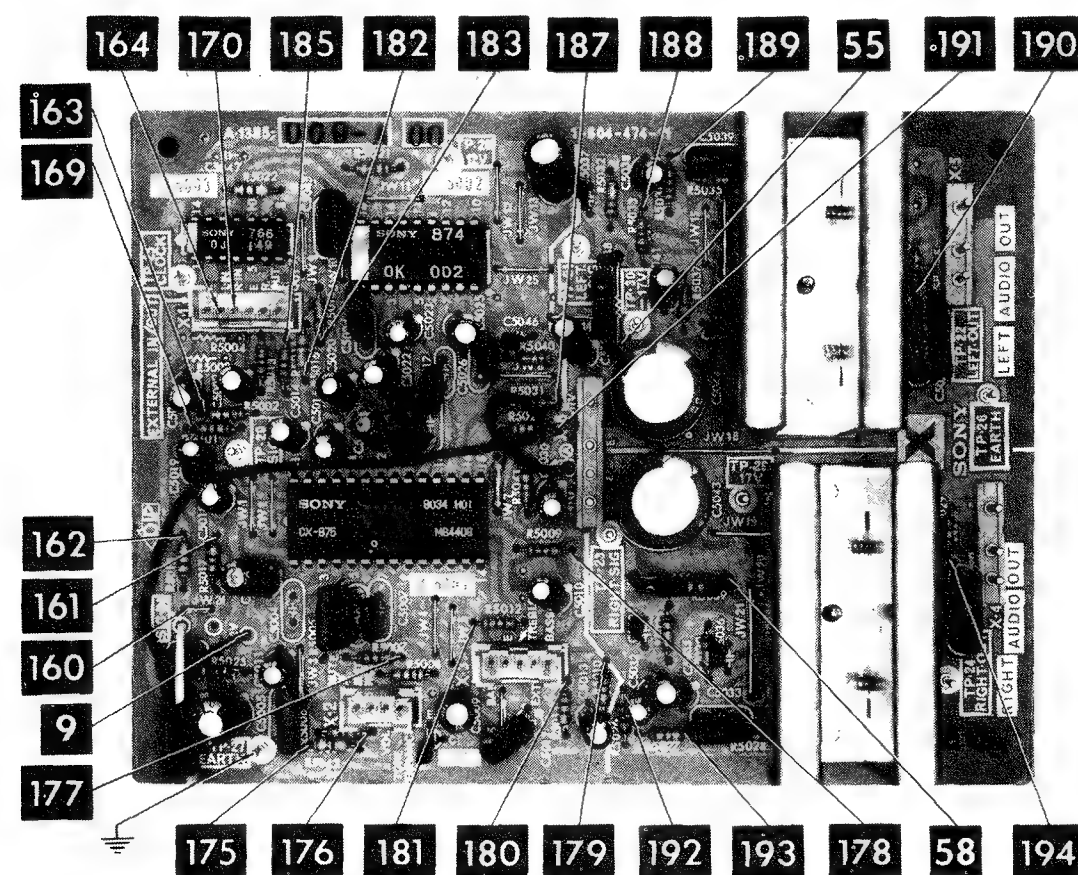
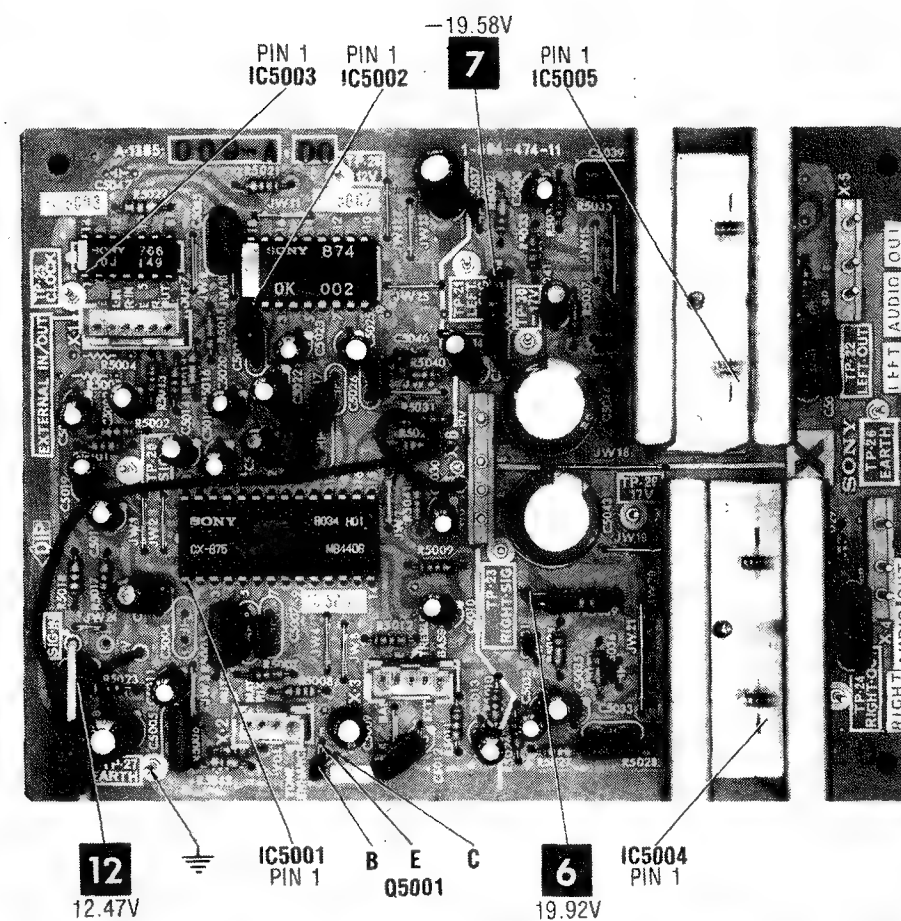
| ITEM No. | RATING | MFR. PART No. | REPLACEMENT DATA | | NOTES |
|-------------|--------------|------------------|----------------------------|----------------------------|-------|
| | | | SPRAGUE PART No. | | |
| | | | Q-LINE | GENERAL LINE | |
| C624 | 4700 35V | 1-125-193-00 | QCP-3107-01 QCP-3107-01 | TVA-1318.7 | |
| C625 | 560 180V | 1-125-213-00 | | | |
| C655 | 470 25V 20% | 1-123-336-00 | | | |
| C656 | 1 50V 20% | 1-123-380-00 | | | |
| C657 | 2.2 50V 20% | 1-123-381-00 | | | |
| C702 | 10 16V 20% | 1-123-356-00 | | | |
| C712 | 1 50V | 1-121-391-00 | | EV-1615 | |
| C713 | 1 50V | 1-121-391-00 | | EV-1615 | |
| C718 | 10 50V 20% | 1-123-356-00 | | | |
| C801 | 1 50V 20% | 1-123-380-00 | | | |
| C802 | 1 50V 20% | 1-123-380-00 | | | |
| C901 | 3.3 50V NP | 1-119-438-00 | | | |
| C902 | 3.3 50V NP | 1-119-438-00 | | | |
| C5001 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5002 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5003 | 47 16V 20% | 1-123-332-00 | | | |
| C5009 | 47 16V 20% | 1-123-332-00 | | | |
| | 1 50V 20% | 1-123-380-00 | | | |
| C5010 | 1 50V 20% | 1-123-380-00 | | | |
| C5011 | 1 50V 20% | 1-123-380-00 | | | |
| C5012 | 1 50V 20% | 1-123-380-00 | | | |
| C5013 | 1 50V 20% | 1-123-380-00 | | | |
| C5014 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5015 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5018 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5019 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5020 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5021 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5022 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5023 | 4.7 25V 20% | 1-123-328-00 | | | |
| C5025 | .47 50V 20% | 1-123-379-00 | | | |
| C5027 | 100 16V 20% | 1-123-333-00 | | | |
| C5028 | 100 16V 20% | 1-123-333-00 | | | |
| C5029 | 22 25V 20% | 1-123-330-00 | | | |
| C5030 | 22 25V 20% | 1-123-330-00 | | | |
| C5032 | 22 25V 20% | 1-123-330-00 | | | |
| C5035 | 33 16V 20% | 1-123-318-00 | | | |
| C5038 | 22 25V 20% | 1-123-330-00 | | | |
| C5041 | 33 16V 20% | 1-123-318-00 | | | |
| C5043 | 1000 25V 20% | 1-123-337-00 | | | |
| C5044 | 1000 25V 20% | 1-123-337-00 | | | |
| C6004 | 33 16V 20% | 1-123-318-00 | | | |
| C6006 | 10 16V 20% | 1-123-356-00 | | | |
| C6008 | 10 16V 20% | 1-123-356-00 | | | |
| C6009 | 1000 16V 20% | 1-123-324-00 | | | |
| C6010 | 10 16V 20% | 1-123-356-00 | | | |
| C6011 | 10 16V 20% | 1-123-356-00 | | | |
| C6013 | 10 16V 20% | 1-123-356-00 | | | |
| C6021 | 100 16V 20% | 1-123-333-00 | | | |
| C6024 | 1 50V 20% | 1-123-380-00 | | | |
| C6025 | 10 16V 20% | 1-123-356-00 | | | |
| C6026 | 1 50V 20% | 1-123-380-00 | | | |
| C6201 | 10 25V 20% | 1-123-329-00 | | | |
| C6202 | 10 25V 20% | 1-123-329-00 | | | |
| C6206 | 33 16V 20% | 1-123-318-00 | | | |
| C6207 | 10 25V 20% | 1-123-329-00 | | | |
| C6301 | 2.2 25V NP | 1-121-705-00 | | | |
| C6302 | 2.2 25V NP | 1-121-705-00 | | | |
| | | | | TVAN-1302.1 TVAN-1302.1 | |

For SAFETY use only equivalent replacement part.
* Axial replacement for radial device.

SONY MODEL
KV-2648R (CH, SCC-338E-A)



F BOARD A Howard W. Sams CIRCUITRACE® Photo



X BOARD A Howard W. Sams CIRCUITRACE® Photo

SONY MODEL
KV-2648R (CH.SCC-338E-A)

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

SEMICONDUCTORS (select replacement transistor for best results) (cont)

| REPLACEMENT DATA | | | | | | | | | | |
|------------------------------|-------------|----------------|---------------------------|--------------|--------------|--------------|---------------------|------------------|-----------------|-------------------|
| ITEM No. | TYPE No. | MFGR. PART No. | GENERAL ELECTRIC PART No. | TCG PART No. | RCA PART No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | ZENITH PART No. | MOTOROLA PART No. |
| Q504 Q505 Q506 Q507 | 2SD795A | 8-729-109-53 | GE-66A | TCG152 | SK3893/152 | ECG152 | TM152 | WEP745/152 | 121-987-03 | T1P41A |
| | 2SC1890AE | 8-729-309-06 | GE-220* | TCG90 | SK3931/90 | ECG90 | TM194* | WEP64/194* | 121-881* | 2N5550* |
| | 2SC1364 | 8-729-663-47 | GE-210 | TCG289A | SK3124/289 | ECG85 | TM123AP* | WEP634 | 121-Z9000A* | MPSA05* |
| | 2SA1175H | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* |
| | 2SA733 | | GE-48 | TCG290A | SK3114/290 | ECG290A | TM290 | WEP62/159* | 121-Z9067 | 2N4403* |
| Q601 Q602 | 2SC2230AGRY | 8-729-213-11 | GE-222* | TCG399 | SK3866 | ECG399 | TM287* | WEP68/287* | 121-Z9045* | MPSA42* |
| | 2SD900B | | | TCG89 | SK9119/89 | ECG89 | | | | |
| | 2SD900B-06 | 8-729-390-06 | | TCG89 | SK9119/89 | ECG89 | | | | |
| | 2SC1890AE | 8-729-309-06 | GE-220* | TCG90 | SK3931/90 | ECG90 | TM194* | WEP64/194* | 121-881* | 2N5550* |
| | 2SC2785K | 8-729-178-54 | GE-89+ | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* |
| Q603 Q604 | 2SC945 | | GE-212 | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* |
| | 2SA1175A | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* |
| | 2SC2785K | 8-729-178-54 | GE-89+ | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* |
| | 2SC945 | | GE-212 | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* |
| | 2SA1175H | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* |
| Q650 Q651 | 2SC1364 | 8-729-663-47 | GE-210 | TCG289A | SK3124/289 | ECG85 | TM123AP* | WEP634 | 121-Z9000A* | MPSA05* |
| | 2SA733AP | | GE-48 | TCG290A | SK3114/290 | ECG290A | TM290 | WEP62/159* | 121-Z9067 | 2N4403* |
| | 2SA1175 | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* |
| | 2SC2278 | 8-729-322-78 | GE-301 | TCG171 | SK3201/171 | ECG171 | TM171 | WEP702/171 | 121-822 | MPSU10 |
| | | | | | | | | | | |
| Q704 Thru Q706 | 2SA1175H | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* |
| | 2SC1364 | 8-729-663-47 | GE-210 | TCG289A | SK3124/289 | ECG85 | TM123AP* | WEP634 | 121-Z9000A* | MPSA05* |
| | 2SA733AP | | GE-48 | TCG290A | SK3114/290 | ECG290A | TM290 | WEP62/159* | 121-Z9067 | 2N4403* |
| | 2SA1175 | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* |
| | 2SC2278 | 8-729-322-78 | GE-301 | TCG171 | SK3201/171 | ECG171 | TM171 | WEP702/171 | 121-822 | MPSU10 |
| Q707 Q708 | 2SC2611 | 8-729-326-10 | GE-232 | TCG157 | SK3747/157 | ECG157 | TM287 | WEP61/157 | 121-Z9016 | MJE340 |
| | 2SC2610BK | | GE-222* | TCG399 | SK3244 | ECG399 | TM287* | WEP68/287* | 121-Z9045* | MPSA42* |
| | 2SC2611 | | GE-232 | TCG157 | SK3747/157 | ECG157 | TM287 | WEP61/157 | 121-Z9016 | MJE340 |
| | 2SC2610BK | 8-729-326-10 | GE-222* | TCG399 | SK3244 | ECG399 | TM287* | WEP68/287* | 121-Z9045* | MPSA42* |
| | 2SC1363 | | GE-20* | TCG289A | SK3124/289 | ECG85 | TM123AP* | WEP633 | 121-Z9000A* | MPSA18* |
| Q709 | 2SC945 | | GE-212 | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* |
| | 2SC2785 | 8-729-178-54 | GE-89+ | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* |

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

SEMICONDUCTORS (select replacement transistor for best results) (cont)

| ITEM No. | TYPE No. | MFR. PART No. | REPLACEMENT DATA | | | | | | | ZENITH PART No. | MOTOROLA PART No. |
|----------|----------|---------------|---------------------------|--------------|--------------|--------------|---------------------|------------------|-------------|-----------------|-------------------|
| | | | GENERAL ELECTRIC PART No. | TCG PART No. | RCA PART No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | | | |
| Q801 | 2SA1175H | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* | |
| | GE-48 | | TCG290A | SK3114/290 | ECG290A | TM290 | WEP62/159* | 121-Z9067 | 2N4403* | | |
| | GE-89+ | | TCG85 | SK3124/289 | ECG85 | TM289 | WEP910/289 | 921-1314 | 2N4401* | | |
| | GE-89+ | | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* | | |
| Q5001 | 2SC2785 | 8-729-178-54 | GE-210 | TCG289A | SK3124/289 | ECG85 | TM123AP* | WEP634 | 121-Z9000A* | MPSA05* | |
| | 2SC1364 | | | | | | | | | | |
| Q6001 | 2SC945R | 8-729-178-54 | GE-212 | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* | |
| | 2SC2785 | | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* | | |
| Q6007 | 2SA1175F | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* | |
| | GE-212 | | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* | | |
| | GE-89+ | | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* | | |
| | 2SC2785 | | | | | | | | | | |
| Q6010 | 2SA1175E | 8-729-117-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* | |
| | GE-212 | | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* | | |
| | GE-89+ | | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* | | |
| | 2SC2785 | | | | | | | | | | |
| Q6012 | 2SC945AR | 8-729-178-54 | GE-212 | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* | |
| | GE-89+ | | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* | | |
| | 2SC2785 | | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* | | |
| | 2SA1175E | | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* | | |
| Q6013 | 2SC945R | 8-729-178-54 | GE-212 | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* | |
| | 2SC2785 | | | | | | | | | | |
| | 2SC2785 | | | | | | | | | | |
| | 2SC2785 | | | | | | | | | | |
| Q6017 | 2SC945R | 8-729-178-54 | GE-212 | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* | |
| | GE-210 | | TCG289A | SK3124/289 | ECG85 | TM123AP* | WEP634 | 121-Z9000A* | MPSA05* | | |
| | 2SC1364 | | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* | | |
| | 2SC2785 | | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* | | |
| Q6019 | 2SA1175H | 8-729-178-54 | GE-82* | TCG159* | SK3114/290 | ECG159* | TM159* | WEP62/159* | 921-1311 | 2N5401* | |
| | GE-89+ | | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* | | |
| | 2SC945R | | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* | | |
| | 2SC2785 | | | | | | | | | | |
| Q6201 | 2SC945R | 8-729-178-54 | GE-212 | TCG85 | SK3124/289 | ECG85 | TM289 | WEP1945 | 121-972* | MPSA18* | |
| | GE-89+ | | TCG85 | SK9229/85 | ECG85 | TM289 | WEP910/289 | 921-1325 | 2N4401* | | |
| | 2SC2785 | | | | | | | | | | |
| | 2SC2785 | | | | | | | | | | |

For SAFETY use only equivalent replacement part.

* Lead configuration may vary from original.

+ Rotate 180° to conform with original lead configuration.

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

CAPACITORS

| ITEM No. | RATING | MFR. PART No. | REPLACEMENT DATA | | | |
|-------------|----------------------|----------------------------------|------------------|--------------|--|--|
| | | | SPRAGUE PART No. | | | |
| | | | Q-LINE | GENERAL LINE | | |
| C5046 | .001 50V 10% | 1-102-858-00 1-102-858-00 | QCP-6160-01 | 10TS-D10 | | |
| C6001 | 150 50V 5% | | | 10TCC-T15 | | |
| C6002 | .01 100V 10% | | | 1FT-S10 | | |
| C6005 | 27 50V 5% | | | 10TCC-Q27 | | |
| C6007 | 68 50V 5% | | | 10TCC-Q68 | | |
| C6012 | 56 50V 5% | | | 10TCC-Q56 | | |
| C6014 | 10 N220 50V $\pm .5$ | | | | | |
| C6015 | 10 N220 50V $\pm .5$ | | | | | |
| C6016 | 47 50V 5% | | | 10TCC-Q47 | | |
| C6017 | 220 50V 5% | | | 10TCC-T22 | | |
| C6018 | 68 50V 5% | | | 10TCC-Q68 | | |
| C6019 | 82 50V 5% | | | 10TCC-Q82 | | |
| C6022 | 220 50V 5% | | | 10TCC-T22 | | |
| C6023 | 100 50V 5% | | | 10TCC-T10 | | |
| C6027 | 100 50V 5% | | | 10TCC-T10 | | |
| C6203 | .0022 500V | 1-141-147-XX | | 10TS-D22 | | |
| C6204 | .0022 500V | | | 10TS-D22 | | |
| C6205 | .0022 500V | | | 10TS-D22 | | |
| CV301 | 15 Trimmer | | | | | |

For SAFETY use only equivalent replacement part.
(1) Part of CRT Socket, Part No. 1-526-629-00.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

| ITEM No. | FUNCTION | RESISTANCE | MFR. PART No. | REPLACEMENT DATA | NOTES |
|----------|----------------------|------------|-----------------|------------------|-------|
| | | | | TRW PART No. | |
| RV201 | RF AGC - VHF | 4700 | 1-224-644-XX | U260R502B | |
| RV202 | RF AGC - UHF | 4700 | 1-224-644-XX | U260R502B | |
| RV301 | Sub Contrast | 4700 | 1-224-644-XX | U260R502B | |
| RV302 | Sub Brightness | 10K | 1-224-645-XX | U260R103B | |
| RV303 | ACC | 10K | 1-224-645-XX | U260R103B | |
| RV304 | Tint (Hue) Centering | 10K | 1-224-645-XX | U260R103B | |
| RV501 | Horiz Frequency | 5000 | 1-228-160-11 | U260R502B | |
| RV502 | Vert Height (Size) | 470 | 1-224-641-XX | U260R501B | |
| RV503 | Pin Amp | 2200 | 1-224-643-XX | U260R252B | |
| RV504 | Pin Phase | 4700 | 1-222-518-31 | U260R502B | |
| RV701 | Screen | 1M | 1-226-157-00 | U260R105B | |
| RV702 | Green Drive | 220 | 1-226-105-00 | X201R251B(3) | |
| RV703 | Blue Drive | 220 | 1-226-105-00 | X201R251B(3) | |
| RV704 | Red Background | 4700 | 1-224-644-XX | U260R502B | |
| RV705 | Green Background | 4700 | 1-224-644-XX | U260R502B | |
| RV706 | Blue Background | 4700 | 1-224-644-XX | U260R502B | |
| RV900 | Focus | | 1-228-170-11(5) | | |
| | | | 1-228-170-00 | | |
| RV901 | Horiz Stat | | 1-228-171-11(5) | | |
| | | | 1-228-171-00 | | |
| RV3301 | Vert Hold | 10K | 1-224-570-31 | | |
| | | | 4-570-31(5) | | |
| RV3302 | Sharpness | 10K | 1-226-498-31 | | |
| | Detent @ | | 6-498-11(5) | | |
| | 50% | | | | |
| RV3303 | Bass | 10K | 1-226-498-00 | | |
| | Detent @ | | 6-498-11(5) | | |
| | 50% | | | | |
| RV3304 | Treble | 10K | 1-226-498-00 | | |
| | Detent @ | | 6-498-11(5) | | |
| | 50% | | | | |
| RV3305 | Balance | 10K | 1-226-498-00 | | |
| | Detent @ | | 6-498-11(5) | | |
| | 50% | | | | |
| RV6001 | Phase Adjust | 330 | 1-224-640-XX | U201R501B | |
| RV6201 | Video Level | 500 | 1-228-255-00 | | |

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

CONTROLS (All wattages 1/2 watt, or less, unless listed) (cont)

| ITEM No. | FUNCTION | RESISTANCE | MFR. PART No. | REPLACEMENT DATA | NOTES |
|----------|---------------------|------------|---------------|------------------|-------|
| | | | | TRW PART No. | |
| RV6202A | Audio Level (Left) | 20K | 1-228-254-00 | | |
| B | Audio Level (Right) | 20K | | | |
| | Audio Level | 50K | | | |
| | Audio Level | 50K | | | |

For SAFETY use only equivalent replacement part.
(3) For horizontal mounting, bend the two outside terminals to fit P.C. board.
Use jumper to connect center terminal to P.C. board.
(5) Number on unit.

RESISTORS (Power and Special)

| ITEM No. | RATING | REPLACEMENT DATA | | | NOTES |
|----------|--|------------------|--------------------------|------------------|--|
| | | MFR. PART No. | SPRAGUE/ Q-LINE PART No. | WORKMAN PART No. | |
| R218 | 1000 1% 1/4W Carbon Film | 1-214-729-00 | | | 22-4050 |
| R219 | 24K 1% 1/4W Carbon Film | 1-246-506-00 | | | |
| R220 | 24K 1% 1/4W Carbon Film | 1-246-506-00 | | | |
| R228 | 470 1% 1/4W Carbon Film | 1-219-721-00 | | | |
| R250 | 12 5% 2W Non-Flammable Metal Oxide | 1-206-465-00 | | | |
| R501 | 5600 5% 3W Non-Flammable Metal Oxide | 1-206-743-00 | | | |
| R510 | 56K 1% 1/4W Carbon Film | 1-214-771-00 | | | |
| R517 | 5100 1% 1/4W Carbon Film | 1-214-746-00 | | | |
| R519 | 100K 1% 1/4W Carbon Film | 1-214-777-00 | | | |
| R533 | 15K 5% 2W Non-Flammable Metal Oxide | 1-206-692-00 | | | |
| R534 | 2000 5% 2W Non-Flammable Metal Oxide | 1-206-671-00 | | | |
| R535 | 1800 5% 1/8W Non-Flammable Carbon Film | 1-246-995-00 | QUP-1208 | | |
| R536 | 10K 1% 1/4W Carbon Film | 1-214-753-00 | | | |
| R537 | 6800 1% 1/4W Carbon Film | 1-214-749-00 | | | |
| R538 | 10K 1% 1/4W Carbon Film | 1-214-753-00 | | | |
| R540 | 100K 1% 1/2W Carbon Film | 1-214-913-00 | | | 22-3102 22-3072 22-1082 22-1088 22-4082 22-4082 22-1086 22-3072 22-1158 22-4096 22-1096 22-2154 22-2154 22-1140 22-1142 22-1066 22-1036 22-4128 22-1072 22-2176 |
| R541 | 1800 5% 1W Non-Flammable Metal Oxide | 1-213-146-00 | | | |
| R548 | 100 5% 1W Non-Flammable Metal Oxide | 1-213-131-00 | | | |
| R550 | 270 5% 1/8W Non-Flammable Carbon Film | 1-211-437-00 | QUP-1168 | | |
| R551 | 470 5% 1/8W Non-Flammable Carbon Film | 1-246-993-00 | QUP-1180 | | |
| R552 | 150 5% 3W Non-Flammable Metal Oxide | 1-206-705-00 | | | |
| R553 | 270 5% 2W Non-Flammable Metal Oxide | 1-206-650-00 | | | |
| R554 | 270 5% 2W Non-Flammable Metal Oxide | 1-206-650-00 | | | |
| R555 | 390 5% 1/4W Non-Flammable Carbon Film | 1-211-536-00 | QUP-1176 | | |
| R556 | 1.2 5% 1/8W Non-Flammable Carbon Film | 1-246-979-00 | QUP-2005 | | |
| R557 | 1.2 5% 1W Non-Flammable Metal Oxide | 1-212-361-00 | | | |
| R561 | 100 5% 1W Non-Flammable Metal Oxide | 1-213-131-00 | | | |
| R568 | 120K 1% 1/4W Carbon Film | 1-214-779-00 | | | |
| R570 | .22 5% 1W Non-Flammable Metal Oxide | 1-212-352-00 | | | |
| R571 | 2.7 5% 1W Non-Flammable Metal Oxide | 1-212-365-00 | | | |
| # R572 | 390K 5% 1/4W Carbon Film | | RA-3945 | | |
| R576 | 1000 5% 2W Non-Flammable Metal Oxide | 1-206-664-00 | | | |
| R578 | 3000 1% 1/4W Carbon Film | 1-214-740-00 | | | |
| R585 | 1000 5% 1/4W Non-Flammable Carbon Film | 1-247-012-00 | QUP-1196 | | |
| R590 | 150K 1% 1/4W Carbon Film | 1-214-781-00 | | | |
| # R601 | 1.8 10% 15W WW Non-Flammable | 1-205-669-00 | | | |
| # R602 | 270K 5% 1/2W Carbon Film | 1-244-931-00 | RB-2745 | | |
| # R603 | 270K 5% 1/2W Carbon Film | 1-244-931-00 | RB-2745 | | |
| # R604 | 7500 5% 10W WW | 1-205-667-00 | 247E7525 | | |
| # R606 | 68K 5% 1/4W Carbon Film | 1-246-517-00 | RA-6835 | | |
| # R607 | 82K 5% 1/4W Carbon Film | 1-246-519-00 | RA-8235 | | |
| R615 | 56 5% 1/8W Non-Flammable Carbon Film | 1-246-988-00 | QUP-1136 | | |
| R616 | 3.3 5% 1/8W Non-Flammable Carbon Film | 1-246-980-00 | QUP-1030 | | |
| R617 | .18 5% 3W WW Non-flammable | 1-217-613-00 | | | |
| R618 | .18 5% 3W WW Non-flammable | 1-217-613-00 | | | |
| R621 | 22K 5% 2W Non-flammable Metal Oxide | 1-206-696-00 | | | |
| R623 | 1.2 5% 1/8W Non-flammable Carbon Film | 1-246-979-00 | QUP-2005 | | |
| R624 | 100 5% 1/4W Non-flammable Carbon Film | 1-247-005-00 | QUP-1148 | | |
| # R625 | 2.2M 5% 1/2W Carbon | 1-202-723-00 | RB-2255 | | |
| R626 | 1 5% 2W Non-flammable Metal Oxide | 1-206-439-00 | | | |
| R627 | 1 5 2W Non-flammable Metal Oxide | 1-206-439-00 | | | |
| R630 | 1.2 5% 1/8W Non-flammable Carbon Film | 1-246-979-00 | QUP-2005 | | |

SONY MODEL
KV-2648R (CH-SCC-338E-A)

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

MISCELLANEOUS

| ITEM No. | PART NAME | MFGR. PART No. | NOTES |
|----------|--------------------|----------------|-------------------------------------|
| CF201 | Trap | 1-409-332-00 | Ceramic (4.5MHz) |
| CF202 | Filter | 1-527-260-00 | Ceramic (4.5MHz) |
| CF6001 | Trap | 1-409-332-00 | Ceramic (4.5MHz) |
| J201 | Socket | 1-526-575-00 | IF |
| L899 | Coil | 1-452-183-00 | ETC Assembly |
| # L901 | Coil | 1-426-008-21 | Degaussing |
| # L902 | Coil | 1-426-008-21 | Degaussing |
| # M1 | Switch | 1-553-774-00 | Antenna |
| NL701 | Tube | 1-519-013-13 | Discharge |
| NL702 | Tube | 1-519-013-13 | Discharge |
| NL705 | Lamp | 1-519-108-XX | Neon |
| # P900 | Cord | 1-551-454-21 | AC Power |
| # RL601 | Realy | 1-515-357-00 | |
| # S901 | Switch | 1-552-658-00 | Master On/Off |
| S6201 | Switch | 1-516-473-XX | Filter |
| S6202 | Switch | 1-516-473-XX | Stereo/Mono |
| SF201 | Filter | 1-404-227-41 | Surface Acoustical Wave |
| SG501 | Spark Gap | 1-519-063-XX | |
| SG701 | Spark Gap | 1-519-063-XX | |
| SG702 | Spark Gap | 1-519-063-XX | |
| SG703 | Spark Gap | 1-519-063-XX | |
| # V901 | CRT | 710AB22 | |
| X301 | Crystal | 1-527-722-00 | 3.58MHz Osc |
| | Antenna | | UHF, RUSSELL Replacement LIN-2H(1) |
| | | | UHF, RUSSELL Replacement BOW-1H(2) |
| | | | VHF, RUSSELL Replacement BEA-1H |
| | Antenna | | Antenna Terminal |
| | Board | 1-536-674-00 | |
| | Holder | 1-517-072-00 | Lamp |
| | Magnet | 1-452-146-00 | BMC |
| | Magnet | 1-452-032-00 | Convergence, Disk 10mm |
| | Magnet | 1-452-094-00 | Convergence, Rotatable Disk 15mm |
| | P.C. Board | A-1330-293-A | "C" Complete (3) |
| | P.C. Board | 1-604-506-00 | "S" (3) |
| | P.C. Board | 1-604-802-00 | "UA" (3) |
| | P.C. Board | 1-604-475-00 | "U" (3) |
| | P.C. Board | 1-604-476-00 | "H" (3) |
| | P.C. Board | 1-604-477-00 | "MJ" (3) |
| | P.C. Board | 1-604-478-00 | "MK" (3) |
| | P.C. Board | 1-604-480-00 | "TA" (3) |
| | P.C. Board | 1-604-976-00 | "N" (3) |
| | P.C. Board | 1-604-479-00 | "SA" (3) |
| | P.C. Board | A-1306-127-A | "MH" Complete (3) |
| | P.C. Board | A-1295-479-A | "A" Complete (3) |
| | P.C. Board | 1-605-005-00 | "AV" (3) |
| | P.C. Board | A-1394-012-A | "AX" Complete (3) |
| | P.C. Board | A-1385-009-A | "X" Complete (3) |
| | P.C. Board | A-1306-126-A | "MZ" Complete (3) |
| | P.C. Board | A-1245-136-A | "F" Complete (3) |
| | P.C. Board | 1-604-801-00 | "F1" (3) |
| # | Permalloy Assembly | X-4308-815-0 | Convergence |
| # | Prescaler | 1-463-316-00 | BT-981 |
| | UHF/VHF Tuner | 1-463-344-00 | PTS. Part No. 1-463-344-00 (BT-858) |

For SAFETY use only equivalent replacement part.
(1) Mounts directly to UHF terminals.
(2) Clips to VHF rod.
(3) Not stocked, since they are seldom required for routine service.

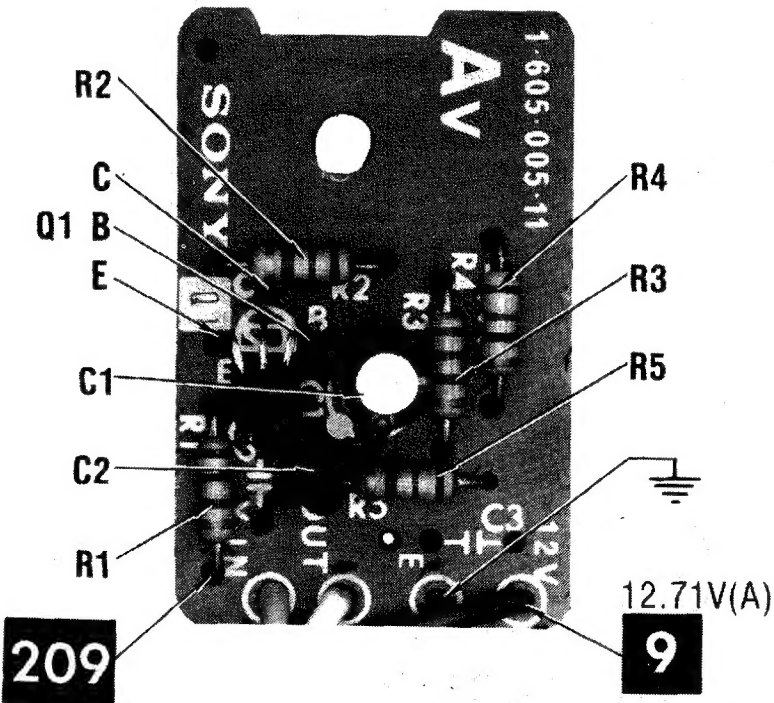
Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

| ITEM | PART No. | ITEM | PART No. |
|-------------------------|--------------|--|--------------|
| Bezel Assembly | X-4342-901-0 | Button-Volume (Up) | X-4352-006-0 |
| Emblem-Sony | 3-701-912-00 | Button-Picture (Up) | X-4352-003-0 |
| Grille Assembly-Speaker | X-4352-009-0 | Button-Channel (Down) | X-4352-004-0 |
| Caster-Swivel | 4-334-955-00 | Button-Volume (Down) | X-4352-004-0 |
| Cabinet Assembly | X-4352-012-0 | Button-Picture (Down) | X-4352-004-0 |
| Glass Top | 4-352-033-00 | Button-Reset | X-4352-002-0 |
| Back Cover | 4-352-002-00 | Button-Master Power | 4-339-528-11 |
| CRT Neck Cover | 4-334-942-00 | Spring-Buttons (8 used) | 3-641-276-00 |
| Frosted Panel | 4-352-024-00 | Button-Add, Erase, Hue, Color, Brightness, Tone, Ant/Aux, Matrix Sound (11 used) | 4-352-009-00 |
| Door, Assembly-Control | X-4352-011-0 | | |
| Button-Power | X-4352-001-0 | | |
| Button-Channel (Up) | X-4352-005-0 | | |

WIRING DATA

| | |
|---|--|
| High voltage Lead | Use BELDEN No. 8866 (40KV) |
| Shielded Hook-up Wire | Use BELDEN No. 8401 or 8421 (Single-Conductor) 8208 (Two-Conductor) |
| General-use Unshielded Hook-up Wire | Use BELDEN No. 8528 (Solid) Available in 13 Colors 8522 (Stranded) Available in 13 Colors |
| 300-Ohm Tuner Input Lead | Use BELDEN No. 8225 |
| 75-Ohm Tuner Input Lead | Use BELDEN No. 8241 |
| 300-Ohm Antenna Lead-in | Use BELDEN No. 8275 (Foam Core) or 8285 (Foam Jacketed) |
| Antenna Rotor Cable | Use BELDEN No. 8464 (Flat) or 8484 (Round) 4-Conductor 8485 (Round) 5-Conductor 8488 (Round) 8-Conductor |



SONY MODEL
KV-2648R (CH.SCC-338E-A)

AV BOARD A Howard W. Sams CIRCUITRACE® Photo

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

CAPACITORS

| ITEM No. | RATING | MFR. PART No. | REPLACEMENT DATA | |
|----------|-----------------|---------------|------------------|--------------|
| | | | SPRAGUE PART No. | |
| | | | Q-LINE | GENERAL LINE |
| C2 | 47 50V 5% | 1-102-129-00 | | 10TCC-Q47 |
| C201 | .0022 50V 10% | | | 10TS-D22 |
| C202 | .018 100V 10% | | | 1PB-S18 |
| C205 | 68 NP0 50V 5% | | | 10TCC-Q68 |
| C207 | .01 50V 10% | | | |
| C208 | 10 50V 5% | | | 10TCC-Q10 |
| C209 | 39 NP0 50V 5% | | | 10TCC-Q39 |
| C210 | .0022 50V 10% | | QCP-6169-01 | 10TS-D22 |
| C211 | .015 100V 10% | | | 1FT-S15 |
| C213 | .0022 50V 10% | | | 10TS-D22 |
| C215 | .0022 50V 10% | | | 10TS-D22 |
| C219 | .0022 50V 10% | | | 10TS-D22 |
| C220 | .0022 50V 10% | | | 10TS-D22 |
| C223 | .01 50V | | QCP-5194-01 | TG-S10 |
| C303 | 120 50V 5% | | | 10TCC-T12 |
| C304 | 180 50V 5% | | | 10TCC-T18 |
| C307 | .027 100V 10% | | | 1FT-S27 |
| C308 | 330 50V 10% | | | 10TS-T33 |
| C309 | 22 50V 5% | 1-102-865-00 | | 10TCC-Q22 |
| C311 | 39 50V 5% | | | 10TCC-Q39 |
| C313 | .0033 100V 10% | | | 192P3329R8 |
| C317 | .001 50V 10% | | | 10TS-D10 |
| C324 | 8pF NP0 50V ±.5 | | | |
| C405 | .1 100V 10% | | QCP-6138-01 | 1PB-P10 |
| C411 | .027 100V 10% | | | 1FT-S27 |
| C413 | .1 100V 10% | | QCP-6138-01 | 1PB-P10 |
| C414 | 47 50V 5% | | | 10TCC-Q47 |
| C502 | .0047 100V 10% | | QCP-6132-01 | 1FT-D47 |
| C503 | .0033 100V 10% | | | 1FT-D33 |
| C504 | .0022 50V 5% | | | MWC-222 |
| C510 | .12 100V 10% | | | 1PB-P12 |
| C513 | .15 200V 10% | | | 2PB-P15 |
| C514 | .015 100V 10% | | QCP-6169-01 | 1FT-S15 |
| C515 | .015 100V 10% | | QCP-6169-01 | 1FT-S15 |
| C518 | .047 100V 10% | | QCP-6211-01 | 1FT-S47 |
| C519 | .0022 100V 10% | | QCP-6120-01 | 6PS-D22 |
| C522 | .033 100V 10% | | QCP-6193-01 | 1FT-S33 |
| C523 | 220 500V 10% | 1-130-692-00 | | 10TCC-T22 |
| C524 | .047 100V 10% | | QCP-6211-01 | 1FT-S47 |
| C527 | .1 200V 10% | | | 2PB-P10 |
| C528 | 220 500V 10% | | | 10TCC-T22 |
| C529 | 560 500V 10% | | | 10TS-T56 |
| C530 | .014 1400V 3% | | | |
| C531 | .0047 1600V | | | 16PS-D47 |
| C532 | .068 200V 10% | | QCP-6232-01 | 6PS-S68 |
| C539 | .022 100V 10% | | QCP-6181-01 | 1FT-S22 |
| C540 | .43 400V 5% | 1-130-239-00 | | |
| C541 | 820 500V 10% | | | 10TS-T82 |
| C545 | .001 500V | | | 10TS-D10 |
| C546 | .001 500V | | | 10TS-D10 |
| C547 | 330 500V 10% | | | 10TS-T33 |
| C548 | .0022 50V 10% | | | 10TS-D22 |
| C549 | .0068 100V 10% | | QCP-6148-01 | 1FT-D68 |
| C550 | .056 100V 10% | | QCP-6226-01 | 1FT-S56 |
| C554 | 50 500V 10% | | | 10TCC-Q50 |
| C555 | .015 100V 10% | | QCP-6169-01 | 1FT-S15 |
| C556 | 15 500V 5% | | | 10TCC-Q15 |
| C563 | 100 500V 5% | | | 10TCC-T10 |
| C566 | 330 1500V 15% | 1-102-327-00 | | |
| C568 | 330 50V 10% | | | 10TS-T33 |
| C569 | 330 50V 10% | | | 10TS-T33 |
| C604 | .22 125V AC | 1-108-745-00 | | |
| C602 | .22 125V AC | 1-108-745-00 | | |
| C603 | .0047 125V AC | 1-161-748-00 | | 125L-D47 |
| C604 | .0047 125V AC | 1-161-748-00 | | 125L-D47 |

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

CAPACITORS (cont)

| ITEM No. | RATING | MFR. PART No. | REPLACEMENT DATA | |
|----------|----------------|--|------------------|--------------|
| | | | SPRAGUE PART No. | |
| | | | Q-LINE | GENERAL LINE |
| C607 | 330 500V 10% | 1-130-697-00 1-130-073-00 1-161-748-00 | | 10TS-T33 |
| C608 | .022 100V 10% | | QCP-6181-01 | 1FT-S22 |
| C609 | .039 100V 10% | | QCP-6202-01 | 1FT-S39 |
| C611 | .001 50V 10% | | | 10TS-D10 |
| C612 | 470 50V 10% | | | 10TS-T47 |
| C613 | .025 1400V 3% | | | |
| C614 | .16 400V 5% | | | 125L-D47 |
| C615 | .0047 125V AC | | QCP-6181-01 | 1FT-S22 |
| C618 | .022 100V 10% | | | 10PS-D47 |
| C619 | .0047 630V 10% | | | 10PS-D47 |
| C620 | .024 600V 3% | | | 2PB-S10 |
| C621 | .0047 630V 10% | | | 2PB-S10 |
| C626 | .01 200V 10% | | | 10TCC-T10 |
| C627 | .01 200V 10% | | | 125L-D47 |
| C628 | 100 500V 5% | | | 10TS-T33 |
| C629 | .0047 125V AC | 1-161-748-00 | | 10TS-D10 |
| C630 | 330 50V 10% | | | 10TS-D10 |
| C631 | .001 500V | | | 10TS-D10 |
| C632 | .001 500V | | | 10TS-D10 |
| C650 | .0047 500V | | QCP-5180-01 | 5GA-D47 |
| C651 | .0047 500V | | QCP-5180-01 | 5GA-D47 |
| C653 | .01 100V 10% | | QCP-6160-01 | 1FT-S10 |
| C654 | .0047 50V 10% | | | 10TS-D47 |
| C658 | .0022 500V 10% | | QCP-6120-01 | 6PS-D22 |
| C659 | .001 50V 10% | | | 10TS-D10 |
| C665 | 560 500V 10% | | | 10TS-T56 |
| C701 | .01 50V | | QCP-5194-01 | TG-S10 |
| C703 | .047 50V | | QCP-5236-01 | TG-S50 |
| C705 | .01 50V | | QCP-5194-01 | TG-S10 |
| C706 | 270 50V 5% | (1) (1) | | 10TCC-T27 |
| C708 | .01 50V | | QCP-5194-01 | TG-S10 |
| C709 | 22 50V 5% | | | 10TCC-Q22 |
| C710 | 22 50V 10% | | | 10TCC-Q22 |
| C711 | .01 50V | | QCP-5194-01 | TG-S10 |
| C714 | 820 500V 10% | | | 10TS-T82 |
| C715 | 820 500V 10% | | | 10TS-T82 |
| C716 | 15 | | | |
| C717 | 15 | | | |
| C719 | 330 2KV | | | 30GA-T33 |
| C720 | .022 1KV | | | 10PS-S22 |
| C721 | 47 50V 5% | | | 10TCC-Q47 |
| C722 | 47 50V 5% | | | 10TCC-Q47 |
| C723 | 56 50V 5% | | | 10TCC-Q56 |
| C724 | .1 200V 10% | | | 2PB-P10 |
| C725 | .022 200V 10% | QCP-6184-01 | | 6PS-S22 |
| C726 | .001 500V | | | 10TS-D10 |
| C5004 | .033 100V 10% | | QCP-6193-01 | 1FT-S33 |
| C5005 | .033 100V 10% | | QCP-6193-01 | 1FT-S33 |
| C5006 | .033 100V 10% | | QCP-6193-01 | 1FT-S33 |
| C5007 | .001 100V 10% | | QCP-6104-01 | 1FT-D10 |
| C5016 | .033 100V 10% | | QCP-6193-01 | 1FT-S33 |
| C5017 | .001 100V 10% | | QCP-6104-01 | 1FT-D10 |
| C5024 | .015 100V 10% | | QCP-6169-01 | 1FT-S15 |
| C5026 | .0018 100V 10% | | | 1PB-D18 |
| C5031 | 100 50V 5% | | | 10TCC-T10 |
| C5033 | .027 100V 10% | | | 1FT-S27 |
| C5034 | .1 100V 10% | | QCP-6138-01 | 1PB-P10 |
| C5036 | 100 50V 5% | | | 10TCC-T10 |
| C5037 | 100 50V 5% | | | 10TCC-T10 |
| C5039 | .027 100V 10% | QCP-6138-01 | | 1FT-S27 |
| C5040 | .1 100V 10% | | | 1PB-P10 |
| C5042 | 100 50V 5% | | QCP-6138-01 | 10TCC-T10 |
| C5045 | .047 100V 10% | | QCP-6211-01 | 1FT-S47 |

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

RESISTORS (Power and Special) (cont)

| ITEM No. | RATING | REPLACEMENT DATA | | |
|----------|---------------------------------------|------------------|--------------------------|------------------|
| | | MFGR. PART No. | SPRAGUE/ Q-LINE PART No. | WORKMAN PART No. |
| R650 | 1.2 5% 1/8W Non-flammable Carbon Film | 1-246-979-00 | QUP-2005 | |
| R651 | 47 5% 2W Non-flammable Metal Oxide | 1-206-479-00 | | 22-4064 |
| R652 | 10 5% 1W Non-flammable Metal Oxide | 1-212-372-00 | | 22-3046 |
| R655 | 68K 1% 1/2W Carbon Film | 1-214-909-00 | | |
| R656 | 6200 1% 1/4W Carbon Film | 1-214-748-00 | | |
| R717 | 5600 5% 2W Non-flammable Metal Oxide | 1-206-682-00 | | 22-4114 |
| R724 | 5600 5% 2W Non-flammable Metal Oxide | 1-206-682-00 | | 22-4114 |
| R728 | 3900 5% 2W Non-flammable Metal Oxide | 1-206-678-00 | | 22-4110 |
| R729 | 3900 5% 2W Non-flammable Metal Oxide | 1-206-678-00 | | 22-4110 |
| R735 | 3300 5% 1W Non-flammable Metal Oxide | 1-213-149-00 | | 22-3108 |
| R736 | 12K 5% 2W Non-flammable Metal Oxide | 1-206-690-00 | | 22-4122 |
| R740 | 3300 5% 1W Non-flammable Metal Oxide | 1-213-149-00 | | 22-3108 |
| R741 | 12K 5% 2W Non-flammable Metal Oxide | 1-206-690-00 | | 22-4122 |
| R754 | 3300 5% 1W Non-flammable Metal Oxide | 1-213-149-00 | | 22-3108 |
| R755 | 12K 5% 2W Non-flammable Metal Oxide | 1-206-690-00 | | 22-4122 |
| R801 | 120 5% 2W Non-flammable Metal Oxide | 1-206-642-00 | | 22-4074 |
| R802 | 100 5% 1W Non-flammable Metal Oxide | 1-213-131-00 | | 22-3072 |
| R5023 | 4.7 5% 1/8W Non-flammable Carbon Film | 1-246-981-00 | QUP-1040 QUP-1168 | 22-1040 |
| R6025 | 270 5% 1/8W Non-flammable Carbon Film | 1-211-437-00 | | 22-1082 |
| TH201 | PTC 1500 Cold | 1-800-626-00 | | |
| TH801 | NTC 4500 Cold | 1-800-627-00 | | FR 1030 |
| TH901 | NTC 4550 Cold | (1) | | |
| THP601 | PTC 8.4 Cold | 1-806-214-00 | | |
| | NTC 156 Cold | | | |

For SAFETY use only equivalent replacement part.
(1) Part of Deflection Yoke L905 Part No. 1-451-201-00.

COILS (RF-IF)

| ITEM No. | FUNCTION | MFGR. PART No. | ITEM No. | FUNCTION | MFGR. PART No. |
|----------|-------------------------|----------------|----------|--------------------|----------------|
| DL301 | Delay Line | 1-415-176-00 | L707 | Peaking (82uH) | 1-407-704-00 |
| DL6001 | Delay Line (1H) | 1-415-207-00 | L708 | RF Choke (180uH) | 1-407-708-00 |
| L201 | RF Choke (3.3uH) | 1-407-687-00 | L709 | RF Choke (54uH) | 1-459-257-00 |
| L202 | Sound IF (18uH) | 1-407-696-00 | L710 | RF Choke (150uH) | 1-407-171-XX |
| L203 | Sound IF (3.3uH) | 1-407-687-00 | L6001 | Peaking (22uH) | 1-407-697-00 |
| L204 | RF Choke (8.2uH) | 1-407-189-XX | L6002 | Peaking (12uH) | 1-407-694-00 |
| L301 | Peaking (33uH) | 1-407-699-00 | L6003 | RF Choke (22uH) | 1-407-697-00 |
| L302 | RF Choke (5.6mH) | 1-408-163-00 | L6004 | RF Choke (10uH) | 1-407-693-00 |
| L303 | RF Choke (1.2uH) | 1-407-682-00 | L6005 | RF Choke (47uH) | 1-407-701-00 |
| L304 | RF Choke (1.2uH) | 1-407-682-00 | L6006 | Peaking (15uH) | 1-407-695-00 |
| L401 | Peaking (33mH) | 1-408-247-00 | L6007 | Trap (18uH) | 1-407-696-00 |
| L501 | RF Choke (82uH) | 1-408-226-00 | L6008 | Peaking (18uH) | 1-407-696-00 |
| L502 | RF Choke (45uH) | 1-459-155-00 | L6009 | RF Choke (15uH) | 1-407-695-00 |
| L503 | RF Choke (10uH) | 1-407-693-00 | L6301 | Peaking (3.3uH) | 1-407-364-00 |
| L504 | RF Choke (.74uH) | 1-407-365-00 | L6302 | Peaking (3.3uH) | 1-407-364-00 |
| L505 | RF Choke | 1-459-075-00 | T201 | Video IF | 1-404-321-00 |
| L506 | Horiz Linearity (3.3mH) | 1-459-256-00 | T202 | Video IF | 1-404-181-00 |
| | | | T203 | AFT | 1-404-182-00 |
| L508 | RF Choke (1.5mH) | 1-405-494-00 | T204 | Sound IF | 1-403-367-00 |
| L601 | RF Choke (22uH) | 1-407-697-00 | T205 | Video IF | 1-404-318-00 |
| L602 | RF Choke (.7uH) | 1-407-365-00 | T206 | Video IF | 1-404-153-00 |
| L701 | Peaking (330uH) | 1-407-175-XX | T302 | Chroma | 1-425-995-00 |
| L702 | Peaking (330uH) | 1-407-175-XX | T601 | Line Choke | 1-421-357-00 |
| L703 | Peaking (5.6uH) | 1-407-690-00 | T606 | Converter Drive | 1-405-760-00 |
| L704 | RF Choke (10mH) | 1-407-504-00 | T6001 | Comb Filter (22mH) | 1-407-571-00 |
| L705 | Peaking (82uH) | 1-407-704-00 | T6002 | 3.58MHz Trap | 1-409-193-00 |
| L706 | Peaking (82uH) | 1-407-704-00 | | | |

For SAFETY use only equivalent replacement part.

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

COILS & TRANSFORMERS (Sweep Circuits)

| ITEM No. | FUNCTION | REPLACEMENT DATA | | |
|----------|--------------------------------------|------------------|--------------|---------------------|
| | | MFGR. PART No. | ON UNIT | THORDARSON PART No. |
| # DY1 | Yoke Horiz 1.1mH 100° Vert 23.9mH | 1-451-201-00 | 1-451-201-11 | |
| # L507 | Width | 1-459-240-00 | 240-11 | |
| # L906 | Neck Assembly | 1-452-182-00 | | |
| # T501 | Horiz Driver | 1-437-079-00 | 437-079 | |
| # T502 | Horiz Output | 1-439-273-00 | 1-439-273-11 | |
| # T503 | Pincushion | 1-421-445-00 | 1-421-445-11 | |
| # T602 | Main Power | 1-421-452-00 | 1-421-452-11 | |
| # T603 | Choke | 1-421-453-00 | 1-421-453-11 | |
| # T604 | Conv Driver | 1-437-078-00 | 437-078 | |
| # T605 | RLT | 1-421-454-00 | 1-421-454-11 | |

For SAFETY use only equivalent replacement part.

TRANSFORMER (Power)

| ITEM No. | RATING | | | REPLACEMENT DATA | | |
|----------|---------------------------|-------------------------------|--------|------------------|---------------------|----------------------------------|
| | PRI. | SEC. 1 | SEC. 2 | MFGR. PART No. | THORDARSON PART No. | NOTES |
| # T901 | 120V AC 39mA AC 129 | 14.24V AC 220mA AC 5.18 | | 1-446-972-00 | | On unit Part # 1-446-972-1 |

For SAFETY use only equivalent replacement part.

SPEAKER

| ITEM No. | TYPE | REPLACEMENT DATA | | NOTES |
|----------|-------------|------------------|---------------|-------|
| | | MFGR. PART No. | QUAM PART No. | |
| SP901 | 7" PM 8 Ohm | 1-503-030-00 | | |
| SP902 | 2" PM 8 Ohm | 1-503-030-11(1) | | |
| | | 1-503-031-00 | | |
| SP903 | 7" PM 8 Ohm | 1-503-031-11(1) | | |
| | | 1-503-030-00 | | |
| SP904 | 2" PM 8 Ohm | 1-503-030-11(1) | | |
| | | 1-503-031-00 | | |
| | | 1-503-031-11(1) | | |

(1) Number on unit.

FUSE DEVICES

| ITEM No. | DESCRIPTION | REPLACEMENT DATA | | | |
|----------|------------------------|------------------|--------|---------------|-----------|
| | | MFGR. PART No. | | BUSS PART No. | |
| | | DEVICE | HOLDER | DEVICE | HOLDER |
| # F601 | 5A @ 125V Slow-Blow | 1-532-272-XX | | MDX 5 | 1A1907-02 |

For SAFETY use only equivalent replacement part.